

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 816

Injection pump
Pump designation : PES6P120A72ORS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...875PA848
 : -3K
Governor no. : 0 421 815 171

Cust. part No. : 313GC5173P18

Customer-spec. information
Customer : MACK TRUCKS
Motor : EM6-250L 4VH
Power KW : 186.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

A01

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 10.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 164.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spreed _____

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 42.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.00
Tolerance mm : ± 0.20

Rated speed rpm : 850
guide sleeve
travel mm : 6.30
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.80
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

A02

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 164.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.80
Rated speed rpm : 930.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1025.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 13.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 6.10

Testing:

Rated speed rpm : 325
rack travel mm : 4.60
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 10.85
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 13.10
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 11.70
Tolerance mm : ± 0.10

Rated speed rpm : 550
rack travel mm : 6.55
Tolerance mm : ± 6.55

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 13.10
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 9.30
Tolerance mm : ± 0.20

Pressure hPa : 215
rack travel mm : 10.35
Tolerance mm : ± 0.05

Pressure hPa : 435
rack travel mm : 12.40
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 243.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000s. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000s. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 148.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000s. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.30
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 185.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000s. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 42.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000s. : ± 5.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 817

Injection pump
Pump designation : PES6P120A72ORS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...900PA848
 : -4K
Governor no. : 0 421 815 173

Cust. part No. : 313GC5173-P14

Customer-spec. information
Customer : MACK TRUCKS INC.
Motor : EC6 350 4VH
Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

A05

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 15.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 251.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 42.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.20
Tolerance mm : ± 0.10

Rated speed rpm : 850
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.60
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 251.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 14.20
Rated speed rpm : 955.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1105.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 11.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 5.0

Rated speed rpm : 275

CRT mm min. : 6.50

Testing:

Rated speed rpm : 325
rack travel mm : 5.00
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 15.25
Tolerance mm : ± 0.05

Rated speed rpm : 625
rack travel mm : 15.55
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 15.50
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 7.50
Tolerance mm : ± 7.50

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 625
Pressure hPa : 1200
rack travel mm : 15.55
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 625
rack travel mm : 8.80
Tolerance mm : ± 0.20

Pressure hPa : 280
rack travel mm : 10.75
Tolerance mm : ± 0.05

Pressure hPa : 650
rack travel mm : 13.80
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 281.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 132.50
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.80
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 140.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 5.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 42.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Speed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 818

Injection pump
Pump designation : PES6P120A720RS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...875PA848
 : -5K
Governor no. : 0 421 815 174

Cust. part No. : 313GC5173-P22

Customer-spec. information
Customer : MACK TRUCKS INC.
Motor : EM 6 275L 4VH
Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

A09

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 191.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 40.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 2.95
Tolerance mm : ± 0.15

Rated speed rpm : 850
guide sleeve
travel mm : 6.30
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.80
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 191.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 930.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1045.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 13.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.7

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.70
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 510
rack travel mm : 14.20
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.30
Tolerance mm : \pm 0.10

Rated speed rpm : 400
rack travel mm : 6.90
Tolerance mm : \pm 6.90

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 14.20
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 9.50
Tolerance mm : \pm 0.10

Pressure hPa : 280
rack travel mm : 10.65
Tolerance mm : \pm 0.05

Pressure hPa : 485
rack travel mm : 13.00
Tolerance mm : \pm 0.30

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 265.50
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 147.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 190.00
Tolerance
cm³/1000 strokes : \pm 20.00
Check tolerance
cm³/1000S. : \pm 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 40.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 5.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113
Combination No. : 0 402 746 818AA
Injection pump
Pump designation : PES6P120A720RS7135
EP type number : 0 412 726 807

Governor
Governor design. :
Governor no. : 0 421 815 ...

Cust. part No. : 313GC...

Customer-spec. information
Customer : MACK TRUCKS INC.
Motor : EM 6 275L 4VH
Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 191.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 40.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.10
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 1.95
Tolerance mm : ± 0.15

Rated speed rpm : 850
guide sleeve
travel mm : 6.50
Tolerance mm : ± 0.20

Rated speed rpm : 1000
guide sleeve
travel mm : 9.30
Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 191.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 61.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 930.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 970.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 13.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.7

Rated speed rpm : 275

CRT mm min. : 5.30

Testing:

Rated speed rpm : 325
rack travel mm : 4.70
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 12.25
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 14.20
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 13.30
Tolerance mm : ± 0.10

Rated speed rpm : 400
rack travel mm : 6.90
Tolerance mm : ± 6.90

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 14.20
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 9.50
Tolerance mm : ± 0.10

Pressure hPa : 280
rack travel mm : 10.65
Tolerance mm : ± 0.05

Pressure hPa : 485
rack travel mm : 13.00
Tolerance mm : ± 0.30

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 265.50
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 147.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.50
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 190.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 40.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
 Test oil : ISO-4113
 Combination No. : 0 402 746 819
 Injection pump
 Pump designation : PES6P120A72ORS7135
 EP type number : 0 412 726 807
 Governor
 Governor design. : RQV325...875PA848
 : -6K
 Governor no. : 0 421 815 175
 Cust. part No. : 313GC5173P26

Customer-spec. information
 Customer : MACK TRUCKS
 Motor : EM6-225L 4VH
 Power KW : 165.0

TEST BENCH REQUIREMENTS

Test oil inlet
 temp. °C : 40.0
 Tolerance °C : ± 2.0
 Overflow valve : 2 417 413 011
 Inlet press. bar : 1.50
 Overflow quantity
 min. l/h : 165.0
 Tolerance l/h : ± 5.0
 Test nozzle holde
 assembly : 1 688 901 101
 Opening pressure
 bar : 208.5
 Tolerance bar : ± 1.5
 Test lines : 1 680 750 008

A17

Outside diameter : 6.00
 x inside diameter : 2.00
 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
 Tolerance bar : ± 1.0
 Prestroke mm : 2.80
 Tolerance mm : ± 0.05
 Check
 tolerance mm : ± 0.10
 Firing order : 1- 5- 3- 6- 2
 : - 4
 Phasing : 0-60-120-180-240
 : -300
 Tolerance : ± 0.50
 Check
 tolerance °NW : ± 0.75
 Start of delivery mark
 Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875
 Rack travel in mm : 11.05
 Tolerance mm : ± 0.05
 Del. quantity
 cm³/1000 strokes : 159.00
 Tolerance
 cm³/1000 strokes : ± 1.00
 Check tolerance
 cm³/1000s. : ± 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 41.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.00
Tolerance mm : ± 0.20

Rated speed rpm : 850
guide sleeve
travel mm : 6.30
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.80
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 159.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.00
Rated speed rpm : 930.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1030.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 13.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.7

Rated speed rpm : 275

CRT mm min. : 6.20

Testing:

Rated speed rpm : 325
rack travel mm : 4.70
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 11.05
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 13.30
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 11.90
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 12.60
Tolerance mm : ± 0.10

Rated speed rpm : 350
rack travel mm : 6.60
Tolerance mm : ± 6.60

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 8.70
Tolerance mm : ± 0.20

Pressure hPa : 220
rack travel mm : 9.75
Tolerance mm : ± 0.05

Pressure hPa : 500
rack travel mm : 12.20
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 237.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spread
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 133.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.70
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 155.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 41.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113
Combination No. : 0 402 746 820
Injection pump
Pump designation : PES6P120A720RS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...850PA878K
Governor no. : 0 421 815 177

Cust. part No. : 313GC5173-P4

Customer-spec. information
Customer : MACK TRUCKS INC.
Motor : E6 275 4VH
Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
mins. L/h : 165.0
Tolerance L/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 182.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
 cm³/1000S. : ± 4.00

 Spread

 Tolerance
 cm³/1000 strokes : 5.0

 Check tolerance
 cm³/1000S. : 9.0

 Rated speed rpm : 325.0
 Rack travel in mm : 4.60
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 35.00
 Tolerance
 cm³/1000 strokes : ± 3.00
 Check tolerance
 cm³/1000S. : ± 5.00
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
 guide sleeve
 travel mm : 1.30
 Tolerance mm : ± 0.10

 Rated speed rpm : 450
 guide sleeve
 travel mm : 2.95
 Tolerance mm : ± 0.15

 Rated speed rpm : 850
 guide sleeve
 travel mm : 6.30
 Tolerance mm : ± 0.10

 Rated speed rpm : 1000
 guide sleeve
 travel mm : 7.80
 Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
 position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 182.00
 Tolerance
 cm³/1000 strokes : ± 1.00
 Check tolerance
 cm³/1000S. : ± 4.00
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 56.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.00
 Rated speed rpm : 905.0
 Tolerance 1/min : ± 5.0

 rack travel mm : 4.00
 Rated speed rpm : 1040.0
 Tolerance 1/min : ± 15.0

 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1150

LOW IDLE

control lever
 position degree : 11.0
 tolerance degree : ± 4.0

 Setting point w/out bumper spring

 Rated speed rpm : 325
 rack travel mm : 4.6

 Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.60
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.05
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 12.65
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 12.60
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 6.20
Tolerance mm : ± 6.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 900
rack travel mm : 12.65
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 600
rack travel mm : 9.70
Tolerance mm : ± 0.20

Pressure hPa : 215
rack travel mm : 10.35
Tolerance mm : ± 0.05

Pressure hPa : 360
rack travel mm : 11.70
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 213.50
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 146.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.70
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 180.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 35.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 821

Injection pump
Pump designation : PES6P120A72ORS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...850PA878
 : -1K
Governor no. : 0 421 815 178

Cust. part No. : 313GC5173-P8

Customer-spec. information
Customer : MACK TRUCKS INC.
Motor : E6 300 4VH
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : + 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : + 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

A25

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : + 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 10.50
Tolerance mm : + 1.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.95
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 201.00

Tolerance
cm³/1000 strokes : + 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 35.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 2.95
Tolerance mm : ± 0.15

Rated speed rpm : 850
guide sleeve
travel mm : 6.30
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.80
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 201.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.90
Rated speed rpm : 905.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1040.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 11.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.60
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.95
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 13.40
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 13.60
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 6.55
Tolerance mm : ± 6.55

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 900
rack travel mm : 13.60
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 600
rack travel mm : 10.10
Tolerance mm : ± 0.20

Pressure hPa : 250
rack travel mm : 10.95
Tolerance mm : ± 0.05

Pressure hPa : 475
rack travel mm : 12.80
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 220.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Aneroid pressure
hPa : 900
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 236.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.00

Aneroid pressure
hPa :)

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 156.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.10
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 215.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 35.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 822

Injection pump
Pump designation : PES6P120A720RS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...900PA878
 : -2K
Governor no. : 0 421 815 179

Cust. part No. : 3136C5173-P12

Customer spec. information
Customer : MACK TRUCKS INC.
Motor : E6 350 4VH
Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

B01

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 13.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 237.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 35.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.20
Tolerance mm : ± 0.10

Rated speed rpm : 850
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.60
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 237.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.90
Rated speed rpm : 955.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1090.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 11.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.1

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.10
Tolerance mm : +- 0.10

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.95
Tolerance mm : +- 0.05

Rated speed rpm : 625
rack travel mm : 14.15
Tolerance mm : +- 0.05

Rated speed rpm : 800
rack travel mm : 14.05
Tolerance mm : +- 0.05

Rated speed rpm : 500
rack travel mm : 6.75
Tolerance mm : +- 6.75

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 625
Pressure hPa : 900
rack travel mm : 14.15
Tolerance mm : +- 0.05

MEASUREMENT

Rated speed rpm : 625
rack travel mm : 8.50
Tolerance mm : +- 0.20

Pressure hPa : 275
rack travel mm : 10.05
Tolerance mm : +- 0.05

Pressure hPa : 570
rack travel mm : 12.50
Tolerance mm : +- 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 625

Del. quantity
cm³/1000 strokes : 260.00
Tolerance
cm³/1000 strokes : +- 3.00
Check tolerance
cm³/1000S. : +- 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 138.00
Tolerance
cm³/1000 strokes : +- 2.00
Check tolerance
cm³/1000S. : +- 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.50
Tolerance mm : +- 0.20
Del. quantity
cm³/1000 strokes : 160.00
Tolerance
cm³/1000 strokes : +- 20.00
Check tolerance
cm³/1000S. : +- 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.10
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 35.00
Tolerance
cm³/1000 strokes : +- 3.00
Check tolerance
cm³/1000S. : +- 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 823

Injection pump
Pump designation : PES6P120A720RS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...875PA878
 : -3K
Governor no. : 0 421 815 180

Cust. part No. : 313GC5173-P24

Customer-spec. information
Customer : MACK TRUCKS INC.
Motor : EM6 275L 4VH
Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 191.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 40.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 2.95
Tolerance mm : ± 0.15

Rated speed rpm : 850
guide sleeve
travel mm : 6.30
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.80
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 191.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 930.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1045.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 13.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.7

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.70
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 12.25
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 14.20
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 13.30
Tolerance mm : ± 0.10

Rated speed rpm : 400
rack travel mm : 6.90
Tolerance mm : ± 6.90

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 14.20
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 9.50
Tolerance mm : ± 0.10

Pressure hPa : 280
rack travel mm : 10.65
Tolerance mm : ± 0.05

Pressure hPa : 485
rack travel mm : 13.00
Tolerance mm : ± 0.30

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 265.50
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 147.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.50
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 190.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 40.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 824

Injection pump
Pump designation : PES6P120A720RS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...875PA878
 : -4K
Governor no. : 0 421 815 181

Cust. part No. : 313GC5173-P28

Customer-spec. information
Customer : MACK TRUCKS INC.
Motor : EM6 225L 4VH
Power KW : 165.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

B09

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 11.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 159.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.70

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 41.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 2.95
Tolerance mm : ± 0.15

Rated speed rpm : 850
guide sleeve
travel mm : 6.30
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.80
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 159.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.00
Rated speed rpm : 930.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1030.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 13.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.7

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.70
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 375
rack travel mm : 11.05
Tolerance mm : \pm 0.05

Rated speed rpm : 510
rack travel mm : 13.30
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 12.60
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 11.90
Tolerance mm : \pm 0.10

Rated speed rpm : 350
rack travel mm : 6.60
Tolerance mm : \pm 6.60

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 900
rack travel mm : 13.30
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 8.70
Tolerance mm : \pm 0.20

Pressure hPa : 220
rack travel mm : 9.75
Tolerance mm : \pm 0.05

Pressure hPa : 500
rack travel mm : 12.20
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 237.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 6.00
Spread
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 133.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.70
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 155.00
Tolerance
cm³/1000 strokes : \pm 20.00
Check tolerance
cm³/1000S. : \pm 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.70
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 41.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 5.00
Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 825

Injection pump
Pump designation : PES6P120A72ORS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...900PA878
: -5K
Governor no. : 0 421 815 182

Cust. part No. : 313GC5173-P16

Customer-spec. information
Customer : MACK TRUCKS INC.
Motor : E C 6 350 4VH
Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 15.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 251.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spreed _____
 Tolerance
 cm³/1000 strokes : 5.0

 Check tolerance
 cm³/1000S. : 9.0

 Rated speed rpm : 325.0
 Rack travel in mm : 5.00
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 42.00
 Tolerance
 cm³/1000 strokes : ± 3.00
 Check tolerance
 cm³/1000S. : ± 5.00
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
 guide sleeve
 travel mm : 1.30
 Tolerance mm : ± 0.10
 Rated speed rpm : 450
 guide sleeve
 travel mm : 3.20
 Tolerance mm : ± 0.10
 Rated speed rpm : 850
 guide sleeve
 travel mm : 6.00
 Tolerance mm : ± 0.10
 Rated speed rpm : 1000
 guide sleeve
 travel mm : 7.60
 Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
 position degree : -1

Rated speed rpm : 1130
 Rack travel in mm : 10.00
 Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
 Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 251.00
 Tolerance
 cm³/1000 strokes : ± 1.00
 Check tolerance
 cm³/1000S. : ± 4.00
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 60.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.0
 Rated speed rpm : 1130
 rack travel mm : 14.00
 Rated speed rpm : 955.0
 Tolerance 1/min : ± 5.0
 rack travel mm : 4.00
 Rated speed rpm : 1095.0
 Tolerance 1/min : ± 15.0
 rack travel mm : 4.00
 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1200

LOW IDLE

control lever
 position degree : 11.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 5.0

Rated speed rpm : 275

CRT mm min. : 6.60

Testing:

Rated speed rpm : 325
 rack travel mm : 5.00
 Tolerance mm : \pm 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900
 rack travel mm : 15.05
 Tolerance mm : \pm 0.05

Rated speed rpm : 625
 rack travel mm : 15.45
 Tolerance mm : \pm 0.05

Rated speed rpm : 700
 rack travel mm : 15.35
 Tolerance mm : \pm 0.05

Rated speed rpm : 500
 rack travel mm : 7.50
 Tolerance mm : \pm 7.50

ANEROID/ALTITUDE
 COMPENSATOR TEST

SETTING

Rated speed rpm : 625
 Pressure hPa : 1200
 rack travel mm : 15.45
 Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 625

rack travel mm : 8.50
 Tolerance mm : \pm 0.20

Pressure hPa : 280
 rack travel mm : 10.45
 Tolerance mm : \pm 0.05

Pressure hPa : 650
 rack travel mm : 13.50
 Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
 hPa : 1200

Rated speed rpm : 625

Del. quantity
 cm³/1000 strokes : 275.50

Tolerance
 cm³/1000 strokes : \pm 3.00

Check tolerance
 cm³/1000s. : \pm 6.00

Spread
 Tolerance
 cm³/1000 strokes : 8.00

Check tolerance
 cm³/1000s. : 12.

Rated speed rpm : 400

Del. quantity
 cm³/1000 strokes : 132.50

Tolerance
 cm³/1000 strokes : \pm 2.00

Check tolerance
 cm³/1000s. : \pm 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 8.50
 Tolerance mm : \pm 0.20

Del. quantity
 cm³/1000 strokes : 150.00

Tolerance
 cm³/1000 strokes : \pm 20.00

Check tolerance
 cm³/1000s. : \pm 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.00
 Tolerance mm : \pm 0.10

Del. quantity
 cm³/1000 strokes : 42.00

Tolerance
 cm³/1000 strokes : \pm 3.00

Check tolerance
 cm³/1000s. : \pm 5.00

Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 826

Injection pump
Pump designation : PES6P120A72ORS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...875PA878
 : -6K
Governor no. : 0 421 815 183

Cust. part No. : 313GC5173-P20

Customer-spec. information
Customer : MACK TRUCKS INC.
Motor : EM6 250L 4VH
Power KW : 186.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 10.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 164.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : + 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 42.00

Tolerance
cm³/1000 strokes : + 3.00

Check tolerance
cm³/1000S. : + 5.00

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : + 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.00
Tolerance mm : + 0.20

Rated speed rpm : 850
guide sleeve
travel mm : 6.30
Tolerance mm : + 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.80
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 164.00

Tolerance
cm³/1000 strokes : + 1.00

Check tolerance
cm³/1000S. : + 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 9.80
Rated speed rpm : 930.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00
Rated speed rpm : 1025.0
Tolerance 1/min : + 15.0

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 13.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.60
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 10.85
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 13.10
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 11.70
Tolerance mm : ± 0.10

Rated speed rpm : 550
rack travel mm : 6.55
Tolerance mm : ± 6.55

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 13.10
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 8.80
Tolerance mm : ± 0.20

Pressure hPa : 215
rack travel mm : 10.35
Tolerance mm : ± 0.05

Pressure hPa : 435
rack travel mm : 12.40
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 243.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 148.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.80
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 165.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 42.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 828

Injection pump
Pump designation : PES6P120A72ORS7148
EP type number : 0 412 726 810

Governor
Governor design. : RQV325...875PA878
 : -7K
Governor no. : 0 421 815 184

Cust. part No. : 313GC5174-P4

Customer-spec. information
Customer : MACK TRUCKS INC.
Motor : EM6 300L 4VH
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. L/h : 165.0
Tolerance L/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 11.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 200.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : +- 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 42.00
Tolerance
cm³/1000 strokes : +- 3.00

Check tolerance
cm³/1000S. : +- 5.00

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : +- 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 2.65
Tolerance mm : +- 0.15

Rated speed rpm : 600
guide sleeve
travel mm : 4.20
Tolerance mm : +- 0.10

Rated speed rpm : 875
guide sleeve
travel mm : 7.40
Tolerance mm : +- 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 8.85

Tolerance mm : +- 0.15

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 200.00
Tolerance
cm³/1000 strokes : +- 1.00
Check tolerance
cm³/1000S. : +- 4.00
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.10
Rated speed rpm : 920.0
Tolerance 1/min : +- 5.0

rack travel mm : 4.00
Rated speed rpm : 1015.0
Tolerance 1/min : +- 15.0

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 11.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.60
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 11.15
Tolerance mm : \pm 0.05

Rated speed rpm : 510
rack travel mm : 16.60
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 15.60
Tolerance mm : \pm 0.10

Rated speed rpm : 450
rack travel mm : 8.30
Tolerance mm : \pm 8.30

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1500
rack travel mm : 16.60
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 8.50
Tolerance mm : \pm 0.20

Pressure hPa : 370
rack travel mm : 10.75
Tolerance mm : \pm 0.05

Pressure hPa : 710

rack travel mm : 14.60
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 302.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 154.50
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 150.00
Tolerance
cm³/1000 strokes : \pm 10.00
Check tolerance
cm³/1000S. : \pm 15.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 42.00
Tolerance
cm³/1000 strokes : \pm 3.00

Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 829

Injection pump
Pump designation : PES6P120A720RS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...1050PA848
 : -8K
Governor no. : 0 421 815 185

Cust. part No. : 313GC5173P30

Customer-spec. information
Customer : MACK TRUCKS
Motor : E6-270 4VH
Power KW : 201.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : + 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : + 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : + 1.0

Prestroke mm : 2.80
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 12.25
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 175.00

Tolerance
cm³/1000 strokes : + 1.00

Check tolerance
cm³/1000s. : + 4.00

Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0
 Rated speed rpm : 325.0
 Rack travel in mm : 5.00
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 41.00
 Tolerance
 cm³/1000 strokes : ± 3.00
 Check tolerance
 cm³/1000S. : ± 5.00
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
 guide sleeve
 travel mm : 1.50
 Tolerance mm : ± 0.10
 Rated speed rpm : 450
 guide sleeve
 travel mm : 2.65
 Tolerance mm : ± 0.15
 Rated speed rpm : 800
 guide sleeve
 travel mm : 4.90
 Tolerance mm : ± 0.10
 Rated speed rpm : 1050
 guide sleeve
 travel mm : 7.45
 Tolerance mm : ± 0.15
 Rated speed rpm : 1200
 guide sleeve
 travel mm : 9.50
 Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
 position degree : -1
 Rated speed rpm : 1210
 Rack travel in mm : 10.00
 Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 175.00
 Tolerance
 cm³/1000 strokes : ± 1.00
 Check tolerance
 cm³/1000S. : ± 4.00
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 59.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.0
 Rated speed rpm : 1210
 rack travel mm : 11.20
 Rated speed rpm : 1095.0
 Tolerance 1/min : ± 5.0
 rack travel mm : 4.00
 Rated speed rpm : 1185.0
 Tolerance 1/min : ± 15.0
 rack travel mm : 4.00
 rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 14.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 5.0

Rated speed rpm : 275

CRT mm min. : 6.40

Testing:

Rated speed rpm : 325
rack travel mm : 5.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 12.25
Tolerance mm : \pm 0.05

Rated speed rpm : 630
rack travel mm : 12.10
Tolerance mm : \pm 0.10

Rated speed rpm : 925
rack travel mm : 12.00
Tolerance mm : \pm 0.10

Rated speed rpm : 800
rack travel mm : 12.30
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 630
Pressure hPa : 900
rack travel mm : 12.05
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 630
rack travel mm : 8.80
Tolerance mm : \pm 0.20

Pressure hPa : 270
rack travel mm : 9.65
Tolerance mm : \pm 0.05

Pressure hPa : 400
rack travel mm : 11.25
Tolerance mm : \pm 0.25

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 630
Del. quantity
cm³/1000 strokes : 195.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 131.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.80
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 155.00
Tolerance
cm³/1000 strokes : \pm 20.00
Check tolerance
cm³/1000S. : \pm 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 41.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 836

Injection pump
Pump designation : PES6P120A720RS7157
EP type number : 0 412 726 814

Governor
Governor design. : RQV325...900PA848
 : -12K
Governor no. : 0 421 815 192

Cust. part No. : 313GC5179-P18

Customer-spec. information
Customer : MACK TRUCKS INC.
Motor : E7 400 4VH
Power KW : 298.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 15.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 273.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 46.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.45
Tolerance mm : ± 0.15

Rated speed rpm : 500
guide sleeve
travel mm : 3.70
Tolerance mm : ± 0.30

Rated speed rpm : 900
guide sleeve
travel mm : 6.80
Tolerance mm : ± 0.10

Rated speed rpm : 1075
guide sleeve
travel mm : 8.65
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 273.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 14.50
Rated speed rpm : 945.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1130.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 14.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 5.0

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 5.00
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 15.55
Tolerance mm : ± 0.05

Rated speed rpm : 625
rack travel mm : 15.40
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 7.30
Tolerance mm : ± 7.30

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 15.55
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 900

rack travel mm : 8.40
Tolerance mm : ± 0.20

Pressure hPa : 225
rack travel mm : 9.45
Tolerance mm : ± 0.05

Pressure hPa : 770
rack travel mm : 14.00
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 280

Check
speed 1/min : 290

FUEL DELIVERY CHARACTERISTICS

C03

Aneroid pressure

hPa : 1200
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 312.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 168.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.10
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 190.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 46.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 837

Injection pump
Pump designation : PES6P120A72ORS7157
EP type number : 0 412 726 814

Governor
Governor design. : RQV325...900PA848
: -15K
Governor no. : 0 421 815 193

Cust. part No. : 313GC5179-P2

Customer-spec. information
Customer : MACK TRUCKS INC.
Motor : E7 350 4VH
Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 229.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 44.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.45
Tolerance mm : ± 0.15

Rated speed rpm : 500
guide sleeve
travel mm : 3.70
Tolerance mm : ± 0.30

Rated speed rpm : 900
guide sleeve
travel mm : 6.80
Tolerance mm : ± 0.10

Rated speed rpm : 1075
guide sleeve
travel mm : 8.65
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 229.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.00
Rated speed rpm : 955.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1115.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 14.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 5.4

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 5.40
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 14.05
Tolerance mm : \pm 0.05

Rated speed rpm : 625
rack travel mm : 13.90
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 6.60
Tolerance mm : \pm 6.60

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 900
rack travel mm : 14.05
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 900

rack travel mm : 9.00
Tolerance mm : \pm 0.20

Pressure hPa : 225
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Pressure hPa : 545
rack travel mm : 12.90
Tolerance mm : \pm 0.20

Start interlock

Rated speed rpm : 265

Check
speed 1/min : 275

FUEL DELIVERY CHARACTERISTICS

C07

Aneroid pressure

hPa : 900

Rated speed rpm : 625

Del. quantity
cm³/1000 strokes : 263.00

Tolerance
cm³/1000 strokes : \pm 3.00

Check tolerance
cm³/1000S. : \pm 6.00

Spreed

Tolerance
cm³/1000 strokes : 8.00

Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 168.00

Tolerance
cm³/1000 strokes : \pm 2.00

Check tolerance
cm³/1000S. : \pm 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.60
Tolerance mm : \pm 0.20

Del. quantity
cm³/1000 strokes : 190.00

Tolerance
cm³/1000 strokes : \pm 20.00

Check tolerance
cm³/1000S. : \pm 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.40
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 44.00

Tolerance
cm³/1000 strokes : \pm 3.00

Check tolerance
cm³/1000S. : \pm 5.00

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
 Test oil : ISO-4113
 Combination No. : 0 402 746 838
 Injection pump
 Pump designation : PES6P120A72ORS7157
 EP type number : 0 412 726 814
 Governor
 Governor design. : RQV325...875PA848
 : -14K
 Governor no. : 0 421 815 194
 Cust. part No. : 313GC5179-P26

Customer-spec. information
 Customer : MACK
 Motor : EM7-250L 4VH
 Power KW : 187.0

TEST BENCH REQUIREMENTS

Test oil inlet
 temp. °C : 40.0
 Tolerance °C : ± 2.0
 Overflow valve : 2 417 413 011
 Overflow quantity
 min. l/h : 165.0
 Tolerance l/h : ± 5.0
 Test nozzle holder
 assembly : 1 688 901 101
 Opening pressure
 bar : 208.5
 Tolerance bar : ± 1.5
 Test lines : 1 680 750 008
 Outside diameter : 6.00

x inside diameter : 2.00
 x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
 Set equal delivery quant.
 per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
 Tolerance bar : ± 1.0
 Prestroke mm : 2.80
 Tolerance mm : ± 0.05
 Check
 tolerance mm : ± 0.10
 Firing order : 1- 5- 3- 6- 2
 : - 4
 Phasing : 0-60-120-180-240
 : -300
 Tolerance : ± 0.50
 Check
 tolerance °NW : ± 0.75
 Start of delivery mark
 Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875
 Rack travel in mm : 10.45
 Tolerance mm : ± 0.05
 Del. quantity
 cm³/1000 strokes : 175.00
 Tolerance
 cm³/1000 strokes : ± 1.00
 Check tolerance
 cm³/1000S. : ± 4.00
 Speed

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80
 Tolerance mm : +- 0.10
 Del. quantity
 cm³/1000 strokes : 43.00
 Tolerance
 cm³/1000 strokes : +- 3.00
 Check tolerance
 cm³/1000S. : +- 5.00
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
 guide sleeve
 travel mm : 1.45
 Tolerance mm : +- 0.15

Rated speed rpm : 500
 guide sleeve
 travel mm : 3.70
 Tolerance mm : +- 0.30

Rated speed rpm : 900
 guide sleeve
 travel mm : 6.80
 Tolerance mm : +- 0.10

Rated speed rpm : 1075
 guide sleeve
 travel mm : 8.65
 Tolerance mm : +- 0.25

GUIDE SLEEVE POSITION

control lever
 position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 175.00
 Tolerance
 cm³/1000 strokes : +- 1.00
 Check tolerance
 cm³/1000S. : +- 4.00
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 58.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 9.40
 Rated speed rpm : 920.0
 Tolerance 1/min : +- 5.0

rack travel mm : 4.00
 Rated speed rpm : 1035.0
 Tolerance 1/min : +- 15.0

rack travel mm : 0.50
 Tolerance mm : +- 0.50
 Rated speed rpm : 1200

LOW IDLE

control lever
 position degree : 16.0
 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 4.8

Rated speed rpm : 275
 CRT mm min. : 6.30

Testing:

Rated speed rpm : 325
rack travel mm : 4.80
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 10.45
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 12.00
Tolerance mm : ± 0.10

Rated speed rpm : 450
rack travel mm : 5.90
Tolerance mm : ± 5.90

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 900
rack travel mm : 12.00
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 8.00
Tolerance mm : ± 0.20

Pressure hPa : 235
rack travel mm : 8.85
Tolerance mm : ± 0.05

Pressure hPa : 485
rack travel mm : 11.00
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 275

Check
speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 247.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 153.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 190.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 839

Injection pump
Pump designation : PES6P120A72ORS7148
EP type number : 0 412 726 810

Governor
Governor design. : RQV325...875PA848
 : -19K
Governor no. : 0 421 815 199

Cust. part No. : 313GC5179-P6

Customer-spec. information
Customer : MACK
Motor : EM7 300L 4VH
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 11.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 211.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 44.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 2.65
Tolerance mm : ± 0.15

Rated speed rpm : 600
guide sleeve
travel mm : 4.20
Tolerance mm : ± 0.10

Rated speed rpm : 875
guide sleeve
travel mm : 7.40
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 8.85

Tolerance mm : ± 0.15

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 211.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 61.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.50
Rated speed rpm : 920.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1015.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 12.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.60
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 11.55
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 16.10
Tolerance mm : ± 0.10

Rated speed rpm : 800
rack travel mm : 12.10
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 15.20
Tolerance mm : ± 0.10

Rated speed rpm : 450
rack travel mm : 7.85
Tolerance mm : ± 7.85

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 16.10
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 8.90
Tolerance mm : ± 0.20

Pressure hPa : 325
rack travel mm : 10.65
Tolerance mm : ± 0.05

Pressure hPa : 815

rack travel mm : 14.50
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 297.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 168.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.90
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 175.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 20.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 44.00
Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000s. : ± 5.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 840

Injection pump
Pump designation : PES6P120A72ORS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...875PA848
 : -18K
Governor no. : 0 421 815 198

Cust. part No. : 313GC5173-P32

Customer-spec. information

Customer : MACK
Motor : EMC6 250L 4VH
Power KW : 187.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

C17

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 174.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : +- 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 42.00

Tolerance
cm³/1000 strokes : +- 3.00

Check tolerance
cm³/1000S. : +- 5.00

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : +- 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.00
Tolerance mm : +- 0.20

Rated speed rpm : 850
guide sleeve
travel mm : 6.30
Tolerance mm : +- 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.80
Tolerance mm : +- 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure

hPa : 1200

Del. quantity
cm³/1000 strokes : 174.00

Tolerance
cm³/1000 strokes : +- 1.00

Check tolerance
cm³/1000S. : +- 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 58.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 10.20
Rated speed rpm : 920.0
Tolerance 1/min : +- 5.0

rack travel mm : 4.00
Rated speed rpm : 1025.0
Tolerance 1/min : +- 15.0

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 13.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.60
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 11.25
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 13.20
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 12.10
Tolerance mm : ± 0.10

Rated speed rpm : 450
rack travel mm : 6.55
Tolerance mm : ± 6.55

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 13.20
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 9.30
Tolerance mm : ± 0.20

Pressure hPa : 215
rack travel mm : 10.35
Tolerance mm : ± 0.05

Pressure hPa : 435
rack travel mm : 12.40
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 510
Del. quantity cm³/1000 strokes : 242.00
Tolerance cm³/1000 strokes : ± 3.00
Check tolerance cm³/1000s. : ± 6.00
Speed
Tolerance cm³/1000 strokes : 8.00
Check tolerance cm³/1000s. : 12.

Rated speed rpm : 400
Del. quantity cm³/1000 strokes : 148.00
Tolerance cm³/1000 strokes : ± 2.00
Check tolerance cm³/1000s. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.30
Tolerance mm : ± 0.20
Del. quantity cm³/1000 strokes : 180.00
Tolerance cm³/1000 strokes : ± 20.00
Check tolerance cm³/1000s. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.60
Tolerance mm : ± 0.10
Del. quantity cm³/1000 strokes : 42.00
Tolerance cm³/1000 strokes : ± 3.00
Check tolerance cm³/1000s. : ± 5.00
Speed
Tolerance cm³/1000 strokes : 8.0
Check tolerance cm³/1000s. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113
Combination No. : 0 402 746 842
Injection pump
Pump designation : PES6P120A72ORS7164
EP type number : 0 412 726 816
Governor
Governor design. : RQV325...875PA848
: -17K
Governor no. : 0 421 815 200
Cust. part No. : 313GC5181P14

Customer-spec. information
Customer : MACK TRUCKS
Motor : EMC6 300L 4VH
Power KW : 200.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 011
Overflow quantity
min. L/h : 165.0
Tolerance L/h : ± 5.0
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0
Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 12.50
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2
: - 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875
Rack travel in mm : 14.95
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 226.00
Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : + 3.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 42.00
Tolerance
cm³/1000 strokes : + 3.00

Check tolerance
cm³/1000S. : + 5.00

Spread

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : + 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.20
Tolerance mm : + 0.20

Rated speed rpm : 850
guide sleeve
travel mm : 6.00
Tolerance mm : + 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.55
Tolerance mm : + 0.15

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 226.00
Tolerance
cm³/1000 strokes : + 1.00
Check tolerance
cm³/1000S. : + 3.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 58.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.90
Rated speed rpm : 920.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00
Rated speed rpm : 1080.0
Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1160

LOW IDLE

control lever
position degree : 14.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.8

Rated speed rpm : 275
CRT mm min. : 5.90

Testing:

Rated speed rpm : 325
rack travel mm : 4.80
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 14.95
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 17.00
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 15.80
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 16.70
Tolerance mm : ± 0.10

Rated speed rpm : 420
rack travel mm : 8.40
Tolerance mm : ± 8.40

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 17.00
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510

rack travel mm : 11.10
Tolerance mm : ± 0.20

Pressure hPa : 375
rack travel mm : 12.75
Tolerance mm : ± 0.05

Pressure hPa : 735
rack travel mm : 15.90

Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 310.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 158.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.10
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 180.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 42.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 846

Injection pump
Pump designation : PES6P120A72ORS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...850PA848
 : -23K
Governor no. : 0 421 815 204

Cust. part No. : 313GC5184-P6

Customer-spec. information
Customer : MACK TRUCKS
Motor : E6 300 4VH
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

C25

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 201.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 35.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 2.95
Tolerance mm : ± 0.15

Rated speed rpm : 850
guide sleeve
travel mm : 6.30
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.80
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 201.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.90
Rated speed rpm : 905.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1040.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 11.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.60
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.95
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 13.65
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 13.85
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 6.80
Tolerance mm : ± 6.80

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 900
rack travel mm : 13.85
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 600
rack travel mm : 10.40
Tolerance mm : ± 0.10

Pressure hPa : 250
rack travel mm : 11.25
Tolerance mm : ± 0.05

Pressure hPa : 475
rack travel mm : 13.10
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 240.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 156.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.40
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 215.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 35.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 847

Injection pump
Pump designation : PES6P120A720RS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...850PA878
 : -8K
Governor no. : 0 421 815 205

Cust. part No. : 313GC5184-P8

Customer-spec. information
Customer : MACK TRUCKS
Motor : E6 300 4VH
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 991 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

D01

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 201.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 35.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 2.95
Tolerance mm : ± 0.15

Rated speed rpm : 850
guide sleeve
travel mm : 6.30
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.80
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

D02

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 201.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00

Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.90
Rated speed rpm : 905.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1040.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 11.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50
Testing:
Rated speed rpm : 325
rack travel mm : 4.60
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL
Rated speed rpm : 850
rack travel mm : 12.95
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 13.65
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 13.85
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 6.80
Tolerance mm : ± 6.80

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 900
rack travel mm : 13.85
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 600

rack travel mm : 10.40
Tolerance mm : ± 0.10

Pressure hPa : 250
rack travel mm : 11.25
Tolerance mm : ± 0.05

Pressure hPa : 475
rack travel mm : 13.10
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 240.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 156.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.40
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 215.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 35.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 848

Injection pump
Pump designation : PES6P120A72ORS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...900PA878
: -9K
Governor no. : 0 421 815 206

Cust. part No. : 313GC5184-P12

Customer-spec. information
Customer : MACK TRUCKS INC.
Motor : E6-350
Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

D05

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 249.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spreed

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.00

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 42.00

Tolerance

cm³/1000 strokes : ± 3.00

Check tolerance

cm³/1000S. : ± 5.00

Spreed

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.30

Tolerance mm : ± 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.20

Tolerance mm : ± 0.10

Rated speed rpm : 850

guide sleeve

travel mm : 6.00

Tolerance mm : ± 0.10

Rated speed rpm : 1000

guide sleeve

travel mm : 7.60

Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever

position degree : -1

D06

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure

hPa : 1200

Del. quantity

cm³/1000 strokes : 249.00

Tolerance

cm³/1000 strokes : ± 1.00

Check tolerance

cm³/1000S. : ± 4.00

Spreed

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 60.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.80

Rated speed rpm : 955.0

Tolerance 1/min : ± 5.0

rack travel mm : 4.00

Rated speed rpm : 1090.0

Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1200

LOW IDLE

control lever

position degree : 11.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 5.0

Rated speed rpm : 275

CRT mm min. : 6.60

Testing:

Rated speed rpm : 325
rack travel mm : 5.00
Tolerance mm : \pm 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 14.85
Tolerance mm : \pm 0.05

Rated speed rpm : 625
rack travel mm : 15.25
Tolerance mm : \pm 0.05

Rated speed rpm : 700
rack travel mm : 15.05
Tolerance mm : \pm 0.05

Rated speed rpm : 500
rack travel mm : 7.45
Tolerance mm : \pm 7.45

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 625
Pressure hPa : 1200
rack travel mm : 15.25
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 625
rack travel mm : 8.50
Tolerance mm : \pm 0.20

Pressure hPa : 310
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Pressure hPa : 710
rack travel mm : 13.90
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 274.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000s. : \pm 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000s. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 132.50
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000s. : \pm 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.50
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 150.00
Tolerance
cm³/1000 strokes : \pm 20.00
Check tolerance
cm³/1000s. : \pm 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 5.00
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 42.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000s. : \pm 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.96
Test oil : ISO-4113

Combination No. : 0 402 746 849

Injection pump
Pump designation : PES6P120A720RS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...850PA878
 : -10K
Governor no. : 0 421 815 209

Cust. part No. : 313GC5184-P4

Customer-spec. information
Customer : MACK TRUCKS
Motor : E6 275 4VH
Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

D09

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 184.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 35.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 2.95
Tolerance mm : ± 0.15

Rated speed rpm : 850
guide sleeve
travel mm : 6.30
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.80
Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 184.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.90
Rated speed rpm : 905.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1040.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1100

LOW IDLE

control lever
position degree : 11.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.6

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.60
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 11.95
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 12.85
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 13.05
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 6.40
Tolerance mm : ± 6.40

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 900
rack travel mm : 13.05
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 600
rack travel mm : 10.40
Tolerance mm : ± 0.10

Pressure hPa : 225
rack travel mm : 11.05
Tolerance mm : ± 0.05

Pressure hPa : 385
rack travel mm : 12.40
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 222.50
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000s. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000s. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 156.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000s. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.40
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 215.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000s. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 35.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000s. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 850

Injection pump
Pump designation : PES6P120A72ORS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...900PA848
 : -24K
Governor no. : 0 421 815 207

Cust. part No. : 313GC5184-P10

Customer-spec. information
Customer : MACK TRUCKS INC.
Motor : E6-350
Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 14.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 249.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.00

Tolerance mm : ± 0.10

Del. quantity

cm³/1000 strokes : 42.00

Tolerance

cm³/1000 strokes : ± 3.00

Check tolerance

cm³/1000S. : ± 5.00

Spread

Tolerance

cm³/1000 strokes : 8.0

Check tolerance

cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve

travel mm : 1.30

Tolerance mm : ± 0.10

Rated speed rpm : 450

guide sleeve

travel mm : 3.20

Tolerance mm : ± 0.10

Rated speed rpm : 850

guide sleeve

travel mm : 6.00

Tolerance mm : ± 0.10

Rated speed rpm : 1000

guide sleeve

travel mm : 7.60

Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever

position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900

Aneroid pressure

hPa : 1200

Del. quantity

cm³/1000 strokes : 249.00

Tolerance

cm³/1000 strokes : ± 1.00

Check tolerance

cm³/1000S. : ± 4.00

Spread

Tolerance

cm³/1000 strokes : 5.0

Check tolerance

cm³/1000S. : 9.0

CONTROL LEVER

control lever

position degree : 60.0

tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.80

Rated speed rpm : 955.0

Tolerance 1/min : ± 5.0

rack travel mm : 4.00

Rated speed rpm : 1090.0

Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm : ± 0.50

Rated speed rpm : 1200

LOW IDLE

control lever

position degree : 11.0

tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 5.0

Rated speed rpm : 275

CRT mm min. : 6.60

Testing:

Rated speed rpm : 325
rack travel mm : 5.00
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 14.85
Tolerance mm : ± 0.05

Rated speed rpm : 625
rack travel mm : 15.25
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 15.05
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 7.45
Tolerance mm : ± 7.45

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 625
Pressure hPa : 1200
rack travel mm : 15.25
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 625
rack travel mm : 8.50
Tolerance mm : ± 0.20

Pressure hPa : 310
rack travel mm : 10.25
Tolerance mm : ± 0.05

Pressure hPa : 710
rack travel mm : 13.90
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 274.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000s. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000s. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 132.50
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000s. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.50
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 150.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000s. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 5.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 42.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000s. : ± 5.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 851

Injection pump
Pump designation : PES6P120A72ORS7135
EP type number : 0 412 726 807

Governor
Governor design. : RQV325...850PA848
 : -25K
Governor no. : 0 421 815 208

Cust. part No. : 313GC5184-P2

Customer-spec. information
Customer : MACK TRUCKS
Motor : E6 275 4VH
Power KW : 202.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00
x inside diameter : 2.00

D17

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 11.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 184.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000s. : ± 4.00

Speed

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.50
 Tolerance mm : ± 0.10

Del. quantity
 cm³/1000 strokes : 35.00
 Tolerance
 cm³/1000 strokes : ± 3.00
 Check tolerance
 cm³/1000S. : ± 5.00

Speed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
 guide sleeve
 travel mm : 1.30
 Tolerance mm : ± 0.10

Rated speed rpm : 450
 guide sleeve
 travel mm : 2.95
 Tolerance mm : ± 0.15

Rated speed rpm : 850
 guide sleeve
 travel mm : 6.30
 Tolerance mm : ± 0.10

Rated speed rpm : 1000
 guide sleeve
 travel mm : 7.80
 Tolerance mm : ± 0.10

GUIDE SLEEVE POSITION

control lever
 position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 184.00
 Tolerance
 cm³/1000 strokes : ± 1.00
 Check tolerance
 cm³/1000S. : ± 4.00

Speed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 54.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.90
 Rated speed rpm : 905.0
 Tolerance 1/min : ± 5.0

rack travel mm : 4.00
 Rated speed rpm : 1035.0
 Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1100

LOW IDLE

control lever
 position degree : 11.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
 rack travel mm : 4.5

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.50
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 11.95
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 12.60
Tolerance mm : ± 0.10

Rated speed rpm : 600
rack travel mm : 13.00
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 6.40
Tolerance mm : ± 6.40

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 900
rack travel mm : 13.05
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 600
rack travel mm : 10.10
Tolerance mm : ± 0.20

Pressure hPa : 225
rack travel mm : 11.05
Tolerance mm : ± 0.05

Pressure hPa : 385
rack travel mm : 12.40
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 222.50
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 156.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.10
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 215.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.50
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 35.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 852

Injection pump
Pump designation : PES6P120A720RS7157
EP type number : 0 412 726 814

Governor
Governor design. : RQV325...900PA909K
Governor no. : 0 421 815 210

Cust. part No. : 313GC5185-P6

Customer-spec. information
Customer : MACK TRUCKS
Motor : E7-400
Power KW : 298.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00

D21

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 15.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 276.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 43.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.00
Tolerance mm : ± 0.20

Rated speed rpm : 650
guide sleeve
travel mm : 5.70
Tolerance mm : ± 0.10

Rated speed rpm : 900
guide sleeve
travel mm : 8.40
Tolerance mm : ± 0.10

Rated speed rpm : 1100
guide sleeve
travel mm : 10.55
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 276.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 14.80
Rated speed rpm : 945.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1120.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 11.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 5.2

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325
rack travel mm : 5.20
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 15.85
Tolerance mm : ± 0.05

Rated speed rpm : 625
rack travel mm : 15.30
Tolerance mm : ± 0.10

Rated speed rpm : 700
rack travel mm : 15.50
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 6.75
Tolerance mm : ± 6.75

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 15.85
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 900

rack travel mm : 8.70
Tolerance mm : ± 0.20

Pressure hPa : 325
rack travel mm : 10.25
Tolerance mm : ± 0.05

Pressure hPa : 790
rack travel mm : 14.00
Tolerance mm : ± 0.20

Start interlock

D23

Rated speed rpm : 275

Check
speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 305.50
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000s. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000s. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 159.50
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000s. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.10
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 200.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000s. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 5.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 43.00

Tolerance
cm³/1000 strokes : + 3.00
Check tolerance
cm³/1000S. : + 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113
Combination No. : 0 402 746 853
Injection pump
Pump designation : PES6P120A72ORS7157
EP type number : 0 412 726 814
Governor
Governor design. : RQV325...900PA909
: -1K
Governor no. : 0 421 815 211
Cust. part No. : 313GC5185-P2

Customer-spec. information
Customer : MACK TRUCKS
Motor : E7-350
Power kW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 011
Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0
Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Firing order : 1- 5- 3- 6- 2
: - 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900
Rack travel in mm : 13.65
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 232.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000s. : ± 3.00
Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 43.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spreed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.00
Tolerance mm : ± 0.20

Rated speed rpm : 650
guide sleeve
travel mm : 5.70
Tolerance mm : ± 0.10

Rated speed rpm : 900
guide sleeve
travel mm : 8.40
Tolerance mm : ± 0.10

Rated speed rpm : 1100
guide sleeve
travel mm : 10.55
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 232.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Spreed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.60
Rated speed rpm : 945.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1095.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 11.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 5.90

Testing:

Rated speed rpm : 325
rack travel mm : 4.80
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.65
Tolerance mm : ± 0.05

Rated speed rpm : 625
rack travel mm : 13.40
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 6.00
Tolerance mm : ± 6.00

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 13.65
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 900
rack travel mm : 8.20
Tolerance mm : ± 0.20

Pressure hPa : 325
rack travel mm : 9.45
Tolerance mm : ± 0.05

Pressure hPa : 685
rack travel mm : 12.30
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 275

Check
speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 266.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spread
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 155.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.60
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 190.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.02.90
Test oil : ISO-4113
Combination No. : 0 402 746 856
Injection pump
Pump designation : PES6P130A320LS7173
EP type number : 0 412 736 802
Governor
Governor design. : RQV300...750PA914
Governor no. : 0 421 813 747
Cust. part No. :

Customer-spec. information
Customer : SSCM
Motor : UD25-L6

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.50
Test nozzle holder
assembly : 0 681 443 022
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 060
Outside diameter : 8.00
x inside diameter : 4.00
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 4- 2- 6- 3
 : - 5
Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750
Rack travel in mm : 12.35
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 481.50
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 5.00
Speed

Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 10.0

Rated speed rpm : 300.0

Rack travel in mm : 5.00
 Tolerance mm : ± 0.30
 Del. quantity
 cm³/1000 strokes : 50.00
 Tolerance
 cm³/1000 strokes : ± 3.00
 Check tolerance
 cm³/1000S. : ± 7.00
 Spreed
 Tolerance
 cm³/1000 strokes : 10.0
 Check tolerance
 cm³/1000S. : 14.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.30
 Tolerance mm : ± 0.20

Rated speed rpm : 600
 guide sleeve
 travel mm : 5.40
 Tolerance mm : ± 0.30

Rated speed rpm : 750
 guide sleeve
 travel mm : 7.80
 Tolerance mm : ± 0.10

Rated speed rpm : 1000
 guide sleeve
 travel mm : 11.50
 Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : -1
 Rated speed rpm : 800

Rack travel in mm : 16.50

E02

Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750
 Del. quantity
 cm³/1000 strokes : 481.50
 Tolerance
 cm³/1000 strokes : ± 1.50
 Check tolerance
 cm³/1000S. : ± 5.00
 Spreed
 Tolerance
 cm³/1000 strokes : 6.0
 Check tolerance
 cm³/1000S. : 10.0

CONTROL LEVER

control lever
 position degree : 122.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 16.5
 Rated speed rpm : 800

rack travel mm : 11.30
 Rated speed rpm : 795.0
 Tolerance 1/min : ± 5.0

rack travel mm : 4.00
 Rated speed rpm : 855.0
 Tolerance 1/min : ± 15.0

rack travel mm : 4.00

LOW IDLE

control lever
 position degree : 65.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 300
 rack travel mm : 5.0

Rated speed rpm : 100
 CRT mm min. : 6.50

Testing:

Rated speed rpm : 300
rack travel mm : 5.00
Tolerance mm : ± 0.30

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 750
rack travel mm : 12.35
Tolerance mm : ± 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 300.0

Rack travel in mm : 5.00
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 50.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 7.00

Spread
Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 861

Injection pump
Pump designation : PES6P120A720RS7183
EP type number : 0 412 726 825

Governor
Governor design. : RQV325...875PA848
 : -26K
Governor no. : 0 421 815 212

Cust. part No. : 313GC5174-P6

Customer-spec. information
Customer : MACK TRUCKS
Motor : EM 6-300L
Power KW : 183.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

E04

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 210.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 44.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 2.65
Tolerance mm : ± 0.15

Rated speed rpm : 600
guide sleeve
travel mm : 4.20
Tolerance mm : ± 0.10

Rated speed rpm : 875
guide sleeve
travel mm : 7.00
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 8.40

Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 210.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.20
Rated speed rpm : 920.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1015.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 14.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325
rack travel mm : 4.80
Tolerance mm : \pm 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 510
rack travel mm : 16.70
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.30
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 15.40
Tolerance mm : \pm 0.20

Rated speed rpm : 420
rack travel mm : 8.30
Tolerance mm : \pm 8.30

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1500
rack travel mm : 16.70
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 8.90
Tolerance mm : \pm 0.20

Pressure hPa : 435

E06

rack travel mm : 10.90
Tolerance mm : \pm 0.10

Pressure hPa : 795
rack travel mm : 14.80
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 311.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 156.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 160.00
Tolerance
cm³/1000 strokes : \pm 10.00
Check tolerance
cm³/1000S. : \pm 15.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.80
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 44.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000s. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 862

Injection pump
Pump designation : PES6P120A720RS7183
EP type number : 0 412 726 825

Governor
Governor design. : RQV325...875PA878
 : -11K
Governor no. : 0 421 815 213

Cust. part No. : 313GC5174-P8

Customer-spec. information
Customer : MACK TRUCKS
Motor : EM 6-300L
Power KW : 183.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

E08

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 210.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : + 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.70

Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 44.00

Tolerance
cm³/1000 strokes : + 3.00

Check tolerance
cm³/1000S. : + 5.00

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : + 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 2.65
Tolerance mm : + 0.15

Rated speed rpm : 600
guide sleeve
travel mm : 4.20
Tolerance mm : + 0.10

Rated speed rpm : 875
guide sleeve
travel mm : 7.40
Tolerance mm : + 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 8.85

Tolerance mm : + 0.15

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 210.00
Tolerance
cm³/1000 strokes : + 1.00
Check tolerance
cm³/1000S. : + 4.00
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.20
Rated speed rpm : 920.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00
Rated speed rpm : 1015.0
Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 14.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.7

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325
rack travel mm : 4.70
Tolerance mm : \pm 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 11.25
Tolerance mm : \pm 0.05

Rated speed rpm : 510
rack travel mm : 16.70
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 13.40
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 15.60
Tolerance mm : \pm 0.10

Rated speed rpm : 450
rack travel mm : 8.30
Tolerance mm : \pm 8.30

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1500
rack travel mm : 16.70
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 8.90
Tolerance mm : \pm 0.20

Pressure hPa : 435

E10

rack travel mm : 10.90
Tolerance mm : \pm 0.10
Pressure hPa : 795
rack travel mm : 14.80
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 311.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 156.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 8.90
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 185.00
Tolerance
cm³/1000 strokes : \pm 20.00
Check tolerance
cm³/1000S. : \pm 25.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.70
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 44.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113
Combination No. : 0 402 746 866

Injection pump
Pump designation : PES6P120A720RS7157
EP type number : 0 412 726 814

Governor
Governor design. : RQV325...875PA909
: -2K
Governor no. : 0 421 815 217

Cust. part No. : 3136C5185-P10

Customer-spec. information
Customer : MACK TRUCKS
Motor : EM7-300L
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 12.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 212.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : + 3.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.90
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 43.00

Tolerance
cm³/1000 strokes : + 3.00

Check tolerance
cm³/1000S. : + 5.00

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : + 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.00
Tolerance mm : + 0.20

Rated speed rpm : 650
guide sleeve
travel mm : 5.70
Tolerance mm : + 0.10

Rated speed rpm : 900
guide sleeve
travel mm : 8.40
Tolerance mm : + 0.10

Rated speed rpm : 1100
guide sleeve
travel mm : 10.55
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 212.00

Tolerance
cm³/1000 strokes : + 1.00

Check tolerance
cm³/1000S. : + 3.00

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 61.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.60
Rated speed rpm : 920.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00
Rated speed rpm : 1065.0
Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 11.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.9

Rated speed rpm : 275

CRT mm min. : 6.00

Testing:

Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 12.65
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 13.70
Tolerance mm : ± 0.10

Rated speed rpm : 400
rack travel mm : 6.50
Tolerance mm : ± 6.50

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 13.65
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 510

rack travel mm : 8.30
Tolerance mm : ± 0.20

Pressure hPa : 370
rack travel mm : 9.55
Tolerance mm : ± 0.05

Pressure hPa : 740
rack travel mm : 12.50
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 275

Check
speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 294.50
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 159.50
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.70
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 200.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 43.00

Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.03.90
Test oil : ISO-4113

Combination No. : 0 402 746 867

Injection pump
Pump designation : PES6P120A72ORS7164
EP type number : 0 412 726 816

Governor
Governor design. : RQV325...900PA848
 : -27K
Governor no. : 0 421 815 218

Cust. part No. : 313GC5181P10

Customer-spec. information
Customer : MACK TRUCKS
Motor : EC6-350 4VH
Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 16.05
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 256.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.40

Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 42.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.20
Tolerance mm : ± 0.20

Rated speed rpm : 850
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.60
Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 256.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 59.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 15.00
Rated speed rpm : 955.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1120.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 14.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.4

Rated speed rpm : 275
CRT mm min. : 5.90
Testing:
Rated speed rpm : 325
rack travel mm : 4.40
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 16.05
Tolerance mm : ± 0.05

Rated speed rpm : 625
rack travel mm : 16.60
Tolerance mm : ± 0.10

Rated speed rpm : 550
rack travel mm : 8.20
Tolerance mm : ± 8.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 625
Pressure hPa : 1200
rack travel mm : 16.60
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 625

rack travel mm : 9.60
Tolerance mm : ± 0.20

Pressure hPa : 265
rack travel mm : 11.35
Tolerance mm : ± 0.05

Pressure hPa : 665
rack travel mm : 14.90
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 283.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 143.50
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.60
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 155.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.40
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 42.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 868

Injection pump
Pump designation : PES6P120A72ORS7164
EP type number : 0 412 726 816

Governor
Governer design. : RQV325...875PA848
 : -28K
Governer no. : 0 421 815 219

Cust. part No. : 313GC5181P6

Customer-spec. information
Customer : MACK TRUCKS
Motor : EM6-275L 4VH
Power KW : 205.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

E20

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 13.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 194.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : + 3.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.90
Tolerance mm : + 0.20

Del. quantity
cm³/1000 strokes : 42.00

Tolerance
cm³/1000 strokes : + 3.00

Check tolerance
cm³/1000S. : + 5.00

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : + 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 2.95
Tolerance mm : + 0.15

Rated speed rpm : 850
guide sleeve
travel mm : 6.30
Tolerance mm : + 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.80
Tolerance mm : + 0.10

GUIDE SLEEVE POSITION

E21

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 194.00

Tolerance
cm³/1000 strokes : + 1.00

Check tolerance
cm³/1000S. : + 3.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 61.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.60
Rated speed rpm : 920.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00
Rated speed rpm : 1060.0
Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 14.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.9

Rated speed rpm : 275

CRT mm min. : 6.20

Testing:

Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : ± 0.20

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 13.65
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 15.50
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 14.05
Tolerance mm : ± 0.15

Rated speed rpm : 600
rack travel mm : 15.20
Tolerance mm : ± 0.10

Rated speed rpm : 420
rack travel mm : 7.60
Tolerance mm : ± 7.60

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 15.50
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 10.90
Tolerance mm : ± 0.20

Pressure hPa : 265
rack travel mm : 12.15
Tolerance mm : ± 0.05

Pressure hPa : 450
rack travel mm : 14.40

Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 264.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 154.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.90
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 205.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.90
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 42.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113
Combination No. : 0 402 746 868AA
Injection pump
Pump designation : PES6P120A72ORS7164
EP type number : 0 412 726 816
Governor
Governor design. :
Governor no. : 0 421 815 ...

Cust. part No. : 313GC...

Customer-spec. information

Customer : MACK TRUCKS
Motor : EM6-275L 4VH
Power KW : 205.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 011
Inlet press. bar : 1.50
Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0
Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 12.50
Tolerance mm : ± 0.50
Firing order : 1- 5- 3- 6- 2
 : - 4
Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875
Rack travel in mm : 13.65
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 197.00
Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : + 3.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.90
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 42.00

Tolerance
cm³/1000 strokes : + 3.00

Check tolerance
cm³/1000S. : + 5.00

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.25
Tolerance mm : + 0.15

Rated speed rpm : 450
guide sleeve
travel mm : 2.05
Tolerance mm : + 0.15

Rated speed rpm : 850
guide sleeve
travel mm : 6.50
Tolerance mm : + 0.20

Rated speed rpm : 1000
guide sleeve
travel mm : 9.70
Tolerance mm : + 0.20

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 197.00

Tolerance
cm³/1000 strokes : + 1.00

Check tolerance
cm³/1000S. : + 3.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 920.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00
Rated speed rpm : 975.0
Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1050

LOW IDLE

control lever
position degree : 14.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.9

Rated speed rpm : 275
CRT mm min. : 6.30
Testing:
Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 13.65
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 15.30
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 14.05
Tolerance mm : ± 0.15

Rated speed rpm : 420
rack travel mm : 7.60
Tolerance mm : ± 7.60

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 15.30
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 10.90
Tolerance mm : ± 0.20

Pressure hPa : 265
rack travel mm : 12.15
Tolerance mm : ± 0.05

Pressure hPa : 450
rack travel mm : 14.20
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 262.50
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 154.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.90
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 205.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.90
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 42.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 869

Injection pump
Pump designation : PES6P120A720RS7164
EP type number : 0 412 726 816

Governor
Governor design. : RQV325...875PA848
 : -29K
Governor no. : 0 421 815 220

Cust. part No. : 313GC5181P4

Customer-spec. information

Customer : MACK TRUCKS
Motor : EMC6 250L 4VH
Power KW : 196.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 13.05
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 185.00

Tolerance
cm3/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : +- 3.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80

Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 42.00

Tolerance
cm³/1000 strokes : +- 3.00

Check tolerance
cm³/1000S. : +- 5.00

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325

guide sleeve
travel mm : 1.30

Tolerance mm : +- 0.10

Rated speed rpm : 450

guide sleeve
travel mm : 3.00

Tolerance mm : +- 0.20

Rated speed rpm : 850

guide sleeve
travel mm : 6.30

Tolerance mm : +- 0.10

Rated speed rpm : 1000

guide sleeve
travel mm : 7.80

Tolerance mm : +- 0.10

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875

Aneroid pressure
hPa : 900

Del. quantity
cm³/1000 strokes : 185.00

Tolerance
cm³/1000 strokes : +- 1.00

Check tolerance
cm³/1000S. : +- 3.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 59.0

tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.00

Rated speed rpm : 920.0

Tolerance 1/min : +- 5.0

rack travel mm : 4.00

Rated speed rpm : 1050.0

Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50

Tolerance mm : +- 0.50

Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 14.0

tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325

rack travel mm : 4.8

Rated speed rpm : 275
CRT mm min. : 5.90
Testing:
Rated speed rpm : 325
rack travel mm : 4.80
Tolerance mm : \pm 0.10
rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 13.05
Tolerance mm : \pm 0.05

Rated speed rpm : 510
rack travel mm : 15.00
Tolerance mm : \pm 0.10

Rated speed rpm : 650
rack travel mm : 14.05
Tolerance mm : \pm 0.15

Rated speed rpm : 450
rack travel mm : 7.35
Tolerance mm : \pm 7.35

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 900
rack travel mm : 15.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 10.60
Tolerance mm : \pm 0.20

Pressure hPa : 205
rack travel mm : 11.75
Tolerance mm : \pm 0.05

Pressure hPa : 460
rack travel mm : 14.10
Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 255.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 154.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.60
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 180.00
Tolerance
cm³/1000 strokes : \pm 20.00
Check tolerance
cm³/1000S. : \pm 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 42.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 5.00
Spreed

Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 870

Injection pump
Pump designation : PES6P120A720RS7157
EP type number : 0 412 726 814

Governor
Governor design. : RQV325...875PA878
: -14K
Governor no. : 0 421 815 222

Cust. part No. : 313GC5179-P28

Customer-spec. information

Customer : MACK
Motor : EM7-250L 4VH
Power KW : 187.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 10.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 175.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000s. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.45
Tolerance mm : ± 0.15

Rated speed rpm : 500
guide sleeve
travel mm : 3.70
Tolerance mm : ± 0.30

Rated speed rpm : 900
guide sleeve
travel mm : 6.80
Tolerance mm : ± 0.10

Rated speed rpm : 1075
guide sleeve
travel mm : 8.65
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 175.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 58.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.40
Rated speed rpm : 920.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1035.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 16.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.8

Rated speed rpm : 275
CRT mm min. : 6.30

Testing:

Rated speed rpm : 325
rack travel mm : 4.80
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 10.45
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 12.00
Tolerance mm : ± 0.10

Rated speed rpm : 450
rack travel mm : 5.90
Tolerance mm : ± 5.90

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 900
rack travel mm : 12.00
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 8.00
Tolerance mm : ± 0.20

Pressure hPa : 235
rack travel mm : 8.85
Tolerance mm : ± 0.05

Pressure hPa : 485
rack travel mm : 11.00
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 275

Check
speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 247.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 153.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 190.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 871

Injection pump
Pump designation : PES6P120A72ORS7157
EP type number : 0 412 726 814

Governor
Governor design. : RQV325...900PA929K
Governor no. : 0 421 815 223

Cust. part No. : 313GC5185-P8

Customer-spec. information
Customer : MACK TRUCKS
Motor : E7-400
Power KW : 298.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00

F08

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900

Rack travel in mm : 15.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 276.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 43.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.00
Tolerance mm : ± 0.20

Rated speed rpm : 650
guide sleeve
travel mm : 5.70
Tolerance mm : ± 0.10

Rated speed rpm : 900
guide sleeve
travel mm : 8.40
Tolerance mm : ± 0.10

Rated speed rpm : 1100
guide sleeve
travel mm : 10.55
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 276.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 14.80
Rated speed rpm : 945.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1120.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 11.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 5.2

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325
rack travel mm : 5.20
Tolerance mm : \pm 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 15.85
Tolerance mm : \pm 0.05

Rated speed rpm : 625
rack travel mm : 15.30
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 15.50
Tolerance mm : \pm 0.10

Rated speed rpm : 500
rack travel mm : 6.75
Tolerance mm : \pm 6.75

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 15.85
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 900
rack travel mm : 8.70
Tolerance mm : \pm 0.20

Pressure hPa : 325
rack travel mm : 10.25
Tolerance mm : \pm 0.05

Pressure hPa : 790
rack travel mm : 14.00
Tolerance mm : \pm 0.20

Start interlock

F10

Rated speed rpm : 275

Check
speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 305.50
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 159.50
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.10
Tolerance mm : \pm 0.30
Del. quantity
cm³/1000 strokes : 200.00
Tolerance
cm³/1000 strokes : \pm 20.00
Check tolerance
cm³/1000S. : \pm 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 43.00

Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000s. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113
Combination No. : 0 402 746 872
Injection pump
Pump designation : PES6P120A720RS7157
EP type number : 0 412 726 814
Governor
Governor design. : RQV325...900PA929
: -1K
Governor no. : 0 421 815 224
Cust. part No. : 313GC5185-P4

Customer-spec. information
Customer : MACK TRUCKS
Motor : E7-350
Power KW : 261.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 011
Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0
Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Firing order : 1- 5- 3- 6- 2
: - 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 900
Rack travel in mm : 13.65
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 232.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00
Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : + 3.00

Check tolerance
cm³/1000S. : + 5.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : + 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.00
Tolerance mm : + 0.20

Rated speed rpm : 650
guide sleeve
travel mm : 5.70
Tolerance mm : + 0.10

Rated speed rpm : 900
guide sleeve
travel mm : 8.40
Tolerance mm : + 0.10

Rated speed rpm : 1100
guide sleeve
travel mm : 10.55
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 900
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 232.00
Tolerance
cm³/1000 strokes : + 1.00
Check tolerance
cm³/1000S. : + 3.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.60
Rated speed rpm : 945.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00
Rated speed rpm : 1095.0
Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 11.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.8

Rated speed rpm : 275
CRT mm min. : 5.90

Testing:

Rated speed rpm : 325
rack travel mm : 4.80
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 900
rack travel mm : 13.65
Tolerance mm : ± 0.05

Rated speed rpm : 625
rack travel mm : 13.40
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 6.00
Tolerance mm : ± 6.00

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 900
Pressure hPa : 1200
rack travel mm : 13.65
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 900
rack travel mm : 8.20
Tolerance mm : ± 0.20

Pressure hPa : 325
rack travel mm : 9.45
Tolerance mm : ± 0.05

Pressure hPa : 685
rack travel mm : 12.30
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 275

Check speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 625
Del. quantity
cm³/1000 strokes : 266.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 155.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.60
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 190.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113
Combination No. : 0 402 746 873
Injection pump
Pump designation : PES6P120A72GRS7157
EP type number : 0 412 726 814
Governor
Governor design. : RQV325...875PA929
 : -2K
Governor no. : 0 421 815 225
Cust. part No. : 313GC5185-P12

Customer-spec. information
Customer : MACK TRUCKS
Motor : EM7-300L
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 011
Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0
Test nozzle holde
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0
Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2
 : - 4
Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875
Rack travel in mm : 12.65
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 212.00
Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : +- 3.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.90
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 43.00

Tolerance
cm³/1000 strokes : +- 3.00

Check tolerance
cm³/1000S. : +- 5.00

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : +- 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.00
Tolerance mm : +- 0.20

Rated speed rpm : 650
guide sleeve
travel mm : 5.70
Tolerance mm : +- 0.10

Rated speed rpm : 900
guide sleeve
travel mm : 8.40
Tolerance mm : +- 0.10

Rated speed rpm : 1100
guide sleeve
travel mm : 10.55
Tolerance mm : +- 0.25

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 212.00
Tolerance
cm³/1000 strokes : +- 1.00
Check tolerance
cm³/1000S. : +- 3.00
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 61.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.60
Rated speed rpm : 920.0
Tolerance 1/min : +- 5.0

rack travel mm : 4.00
Rated speed rpm : 1065.0
Tolerance 1/min : +- 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1200

LOW IDLE

control lever
position degree : 11.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.9

Rated speed rpm : 275

CRT mm min. : 6.00

Testing:

Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 12.65
Tolerance mm : ± 0.05

Rated speed rpm : 510
rack travel mm : 13.70
Tolerance mm : ± 0.10

Rated speed rpm : 400
rack travel mm : 6.50
Tolerance mm : ± 6.50

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 13.70
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 8.30
Tolerance mm : ± 0.20

Pressure hPa : 370
rack travel mm : 9.55
Tolerance mm : ± 0.05

Pressure hPa : 740
rack travel mm : 12.50
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 275

Check
speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200

Rated speed rpm : 510

Del. quantity
cm³/1000 strokes : 294.50

Tolerance
cm³/1000 strokes : ± 2.00

Check tolerance
cm³/1000S. : ± 5.00

Spread

Tolerance
cm³/1000 strokes : 8.00

Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400

Del. quantity
cm³/1000 strokes : 159.50

Tolerance
cm³/1000 strokes : ± 2.00

Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.70
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 200.00

Tolerance
cm³/1000 strokes : ± 20.00

Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0

Rack travel in mm : 4.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 43.00

Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 874

Injection pump
Pump designation : PES6P120A720RS7157
EP type number : 0 412 726 814

Governor
Governor design. : RQV325...850PA909
: -3K
Governor no. : 0 421 815 230

Cust. part No. : 313GC5185-P14

Customer-spec. information
Customer : MACK TRUCKS
Motor : E7-300
Power KW : 220.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 205.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.00
Tolerance mm : ± 0.20

Rated speed rpm : 650
guide sleeve
travel mm : 5.70
Tolerance mm : ± 0.10

Rated speed rpm : 900
guide sleeve
travel mm : 8.40
Tolerance mm : ± 0.10

Rated speed rpm : 1100
guide sleeve
travel mm : 10.55
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

F21

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 205.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 55.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 895.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1045.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 9.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.10

Testing:

Rated speed rpm : 325
rack travel mm : 4.80
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.25
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 12.50
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 5.55
Tolerance mm : ± 5.55

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 12.50
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 600
rack travel mm : 7.90
Tolerance mm : ± 0.20

Pressure hPa : 265
rack travel mm : 9.05
Tolerance mm : ± 0.05

Pressure hPa : 565
rack travel mm : 11.40
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 275

Check speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure hPa : 1200
Rated speed rpm : 600
Del. quantity cm³/1000 strokes : 244.00
Tolerance cm³/1000 strokes : ± 3.00
Check tolerance cm³/1000s. : ± 5.00
Spreed Tolerance cm³/1000 strokes : 8.00
Check tolerance cm³/1000s. : 12.

Rated speed rpm : 400
Del. quantity cm³/1000 strokes : 150.00
Tolerance cm³/1000 strokes : ± 2.00
Check tolerance cm³/1000s. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.30
Tolerance mm : ± 0.30
Del. quantity cm³/1000 strokes : 200.00
Tolerance cm³/1000 strokes : ± 20.00
Check tolerance cm³/1000s. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.80
Tolerance mm : ± 0.10
Del. quantity cm³/1000 strokes : 43.00
Tolerance cm³/1000 strokes : ± 3.00
Check tolerance cm³/1000s. : ± 5.00

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 875

Injection pump
Pump designation : PES6P120A720RS7157
EP type number : 0 412 726 814

Governor
Governor design. : RQV325...975PA909
: -4K

Governor no. : 0 421 815 231

Cust. part No. : 313GC5185-P18

Customer-spec. information

Customer : MACK TRUCKS
Motor : E7-300A
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 975

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 202.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 0.75
Tolerance mm : ± 0.25

Rated speed rpm : 325
guide sleeve
travel mm : 1.60
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.10
Tolerance mm : ± 0.20

Rated speed rpm : 1000
guide sleeve
travel mm : 8.50
Tolerance mm : ± 0.10

Rated speed rpm : 1200
guide sleeve
travel mm : 10.40
Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 202.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 58.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1020.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1160.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 12.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.10

Testing:

Rated speed rpm : 325
rack travel mm : 4.80
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 975
rack travel mm : 12.35
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 11.80
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 5.75
Tolerance mm : ± 5.75

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 975
Pressure hPa : 1200
rack travel mm : 12.35
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 975
rack travel mm : 7.90
Tolerance mm : ± 0.20

Pressure hPa : 235
rack travel mm : 9.05
Tolerance mm : ± 0.05

Pressure hPa : 460
rack travel mm : 11.00
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 275

Check speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 224.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 148.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.30
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 200.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 876

Injection pump
Pump designation : PES6P120A72URS7157
EP type number : 0 412 726 814

Governor
Governor design. : RQV325...850PA929
: -3K
Governor no. : 0 421 815 232

Cust. part No. : 313GC5185-P16

Customer-spec. information
Customer : MACK TRUCKS
Motor : E7-300 4VH
Power KW : 220.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Overflow quantity
min. L/h : 165.0
Tolerance L/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 12.25
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 205.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.00
Tolerance mm : ± 0.20

Rated speed rpm : 650
guide sleeve
travel mm : 5.70
Tolerance mm : ± 0.10

Rated speed rpm : 900
guide sleeve
travel mm : 8.40
Tolerance mm : ± 0.10

Rated speed rpm : 1100
guide sleeve
travel mm : 10.55
Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 850
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 205.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 55.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.20
Rated speed rpm : 895.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1055.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1150

LOW IDLE

control lever
position degree : 11.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.30

Testing:

Rated speed rpm : 325
rack travel mm : 4.80
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 12.25
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 12.60
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 5.55
Tolerance mm : ± 5.55

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 12.60
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 600
rack travel mm : 7.90
Tolerance mm : ± 0.20

Pressure hPa : 265
rack travel mm : 9.05
Tolerance mm : ± 0.05

Pressure hPa : 565
rack travel mm : 11.40
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 275

Check
speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 244.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spread
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 150.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.30
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 200.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.02.90
Test oil : ISO-4113
Combination No. : 0 402 746 877
Injection pump
Pump designation : PES6P120A72ORS7157
EP type number : 0 412 726 814
Governor
Governor design. : RQV325...975PA929
 : -4K
Governor no. : 0 421 815 233
Cust. part No. : 313GC5185-P20

Customer-spec. information
Customer : MACK TRUCKS
Motor : E7-300A
Power KW : 224.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 011
Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.00

G04

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0
Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Firing order : 1- 5- 3- 6- 2
 : - 4
Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 975
Rack travel in mm : 12.35
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 202.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00
Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 0.75
Tolerance mm : ± 0.25

Rated speed rpm : 325
guide sleeve
travel mm : 1.60
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.10
Tolerance mm : ± 0.20

Rated speed rpm : 1000
guide sleeve
travel mm : 8.50
Tolerance mm : ± 0.10

Rated speed rpm : 1200
guide sleeve
travel mm : 10.40
Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 202.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 58.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1020.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1180.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 12.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.10

Testing:

Rated speed rpm : 325
rack travel mm : 4.80
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 975
rack travel mm : 12.35
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 11.80
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 5.75
Tolerance mm : ± 5.75

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 975
Pressure hPa : 1200
rack travel mm : 12.35
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 975
rack travel mm : 7.90
Tolerance mm : ± 0.20

Pressure hPa : 235
rack travel mm : 9.05
Tolerance mm : ± 0.05

Pressure hPa : 570
rack travel mm : 11.80
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 275

Check
speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 224.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 148.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.30
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 200.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00

Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113
Combination No. : 0 402 746 886
Injection pump
Pump designation : PES6P120A720RS7157
EP type number : 0 412 726 814
Governor
Governor design. : RQV325...975PA944
: -4K
Governor no. : 0 421 815 239
Cust. part No. : 313GC5185-P26

Customer-spec. information
Customer : MACK TRUCKS
Motor : E7-250A
Power KW : 186.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 011
Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0
Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Firing order : 1- 5- 3- 6- 2
: - 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 975
Rack travel in mm : 10.45
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 165.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000s. : ± 3.00
Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 43.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Speed
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 275
guide sleeve
travel mm : 0.75
Tolerance mm : ± 0.25

Rated speed rpm : 325
guide sleeve
travel mm : 1.60
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.10
Tolerance mm : ± 0.20

Rated speed rpm : 1000
guide sleeve
travel mm : 8.50
Tolerance mm : ± 0.10

Rated speed rpm : 1200
guide sleeve
travel mm : 10.40
Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 975
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 165.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 58.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.40
Rated speed rpm : 1020.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1135.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 12.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 6.10

Testing:

Rated speed rpm : 325
rack travel mm : 4.80
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 975
rack travel mm : 10.45
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 10.90
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 5.10
Tolerance mm : ± 5.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600
Pressure hPa : 1200
rack travel mm : 10.90
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 600
rack travel mm : 7.70
Tolerance mm : ± 0.20

Pressure hPa : 195
rack travel mm : 8.45
Tolerance mm : ± 0.05

Pressure hPa : 375
rack travel mm : 10.10
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 275

Check
speed 1/min : 285

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 201.50
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Speed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 148.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 10.30
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 200.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.80
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.05.90
Test oil : ISO-4113

Combination No. : 0 402 746 888

Injection pump
Pump designation : PES6P120A72ORS7164
EP type number : 0 412 726 816

Governor
Governor design. : RQV325...875PA878
 : -15K
Governor no. : 0 421 815 235

Cust. part No. : 31EGC5181P16

Customer-spec. information
Customer : MACK TRUCKS
Motor : EMC6 300L 4VH
Power KW : 200.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 011

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

G12

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 18.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 875

Rack travel in mm : 14.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 226.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 42.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.30
Tolerance mm : ± 0.10

Rated speed rpm : 450
guide sleeve
travel mm : 3.20
Tolerance mm : ± 0.20

Rated speed rpm : 850
guide sleeve
travel mm : 6.00
Tolerance mm : ± 0.10

Rated speed rpm : 1000
guide sleeve
travel mm : 7.55
Tolerance mm : ± 0.15

GUIDE SLEEVE POSITION

control lever
position degree : -1

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 875
Aneroid pressure
hPa : 1200

Del. quantity
cm³/1000 strokes : 226.00
Tolerance

cm³/1000 strokes : ± 1.00
Check tolerance

cm³/1000S. : ± 3.00
Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 58.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 13.90
Rated speed rpm : 920.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1080.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1160

LOW IDLE

control lever
position degree : 14.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.8

Rated speed rpm : 275

CRT mm min. : 5.90

Testing:

Rated speed rpm : 325
rack travel mm : 4.80
Tolerance mm : \pm 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 875
rack travel mm : 14.95
Tolerance mm : \pm 0.05

Rated speed rpm : 510
rack travel mm : 16.90
Tolerance mm : \pm 0.10

Rated speed rpm : 700
rack travel mm : 15.70
Tolerance mm : \pm 0.10

Rated speed rpm : 600
rack travel mm : 16.50
Tolerance mm : \pm 0.10

Rated speed rpm : 420
rack travel mm : 8.40
Tolerance mm : \pm 8.40

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 510
Pressure hPa : 1200
rack travel mm : 16.90
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 510
rack travel mm : 11.10
Tolerance mm : \pm 0.20

Pressure hPa : 375
rack travel mm : 12.75
Tolerance mm : \pm 0.05

Pressure hPa : 735
rack travel mm : 15.90

Tolerance mm : \pm 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200
Rated speed rpm : 510
Del. quantity
cm³/1000 strokes : 308.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 158.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.10
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 180.00
Tolerance
cm³/1000 strokes : \pm 20.00
Check tolerance
cm³/1000S. : \pm 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 42.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 5.00

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.02.90
Test oil : ISO-4113
Combination No. : 0 402 748 801
Injection pump
Pump designation : PES8P120A920/4LS7184
EP type number : 0 412 728 802
Governor
Governor design. : RQV325...950PA848
 : -16K
Governor no. : 0 421 815 196
Cust. part No. : 313GC5180P2

Customer-spec. information
Customer : MACK
Motor : E9 500
Power KW : 373.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 011
Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0
Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 12.00
Tolerance mm : ± 1.00
Firing order : 1- 2- 7- 8- 4- 5
 : - 6- 3
Phasing : 0-45-90-135-180-225
 : -270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950
Rack travel in mm : 15.05
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 231.00
Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 41.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.45
Tolerance mm : ± 0.15

Rated speed rpm : 450
guide sleeve
travel mm : 2.95
Tolerance mm : ± 0.15

Rated speed rpm : 800
guide sleeve
travel mm : 5.80
Tolerance mm : ± 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 7.95
Tolerance mm : ± 0.15

Rated speed rpm : 1200
guide sleeve
travel mm : 9.65
Tolerance mm : ± 0.15

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 1150

Rack travel in mm : 10.00
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 231.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 62.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.0
Rated speed rpm : 1150
rack travel mm : 14.00
Rated speed rpm : 995.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1150.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 17.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 5.7

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 5.70
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 15.05
Tolerance mm : ± 0.05

Rated speed rpm : 650
rack travel mm : 14.60
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 7.00
Tolerance mm : ± 7.00

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 950
Pressure hPa : 900
rack travel mm : 15.05
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 950
rack travel mm : 9.20
Tolerance mm : ± 0.20

Pressure hPa : 230
rack travel mm : 10.65
Tolerance mm : ± 0.05

Pressure hPa : 535
rack travel mm : 13.35
Tolerance mm : ± 0.15

G18

Start interlock

Rated speed rpm : 270

Check
speed 1/min : 280

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 900
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 255.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00

Spreed
Tolerance
cm³/1000 strokes : 10.00
Check tolerance
cm³/1000S. : 14.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 146.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.30
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 165.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 5.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 41.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000s. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 23.03.90
Test oil : ISO-4113
Combination No. : 0 402 748 802
Injection pump
Pump designation : PES8P120A920/4LS7159
EP type number : 0 412 728 801
Governor
Governor design. : RQV325..1050PA848
 : -21K
Governor no. : 0 421 815 201
Cust. part No. : 313GC5178P2

Customer-spec. information
Customer : MACK
Motor : EE9 502
Power KW : 368.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 011
Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0
Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 2- 7- 8- 4- 5
 : - 6- 3
Phasing : 0-45-90-135-180-225
 : -270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 630
Rack travel in mm : 11.95
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 208.00
Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 4.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 43.00

Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 5.00

Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.45
Tolerance mm : ± 0.15

Rated speed rpm : 450
guide sleeve
travel mm : 2.50
Tolerance mm : ± 0.20

Rated speed rpm : 800
guide sleeve
travel mm : 4.60
Tolerance mm : ± 0.20

Rated speed rpm : 1050
guide sleeve
travel mm : 7.00
Tolerance mm : ± 0.10

Rated speed rpm : 1200
guide sleeve
travel mm : 9.05
Tolerance mm : ± 0.15

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 1220

Rack travel in mm : 10.00
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 630
Aneroid pressure
hPa : 1200
Del. quantity
cm³/1000 strokes : 208.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 61.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.0
Rated speed rpm : 1220

rack travel mm : 12.10
Rated speed rpm : 1100.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1195.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 13.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 4.9

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 4.90
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 630
rack travel mm : 11.95
Tolerance mm : ± 0.05

Rated speed rpm : 1050
rack travel mm : 13.20
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 5.65
Tolerance mm : ± 5.65

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1050
Pressure hPa : 1200
rack travel mm : 13.20
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1050
rack travel mm : 9.30
Tolerance mm : ± 0.20

Pressure hPa : 195
rack travel mm : 10.25
Tolerance mm : ± 0.05

Pressure hPa : 410
rack travel mm : 12.30
Tolerance mm : ± 0.20

G22

Start interlock

Rated speed rpm : 280

check
speed 1/min : 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : 1200
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 205.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 10.00
Check tolerance
cm³/1000S. : 14.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 172.50
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 9.70
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 170.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 25.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 4.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 43.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.02.90
Test oil : ISO-4113
Combination No. : 0 402 748 803
Injection pump
Pump designation : PES8P120A920/4LS7184
EP type number : 0 412 728 802
Governor
Governor design. : RQV325...950PA848
: -22K
Governor no. : 0 421 815 202
Cust. part No. : 313GC5180P2

Customer-spec. information

Customer : MACK
Motor : E9 450
Power KW : 331.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 011
Overflow quantity
min. l/h : 165.0
Tolerance l/h : ± 5.0
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 008
Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 12.00
Tolerance mm : ± 1.00

Firing order : 1- 2- 7- 8- 4- 5
: - 6- 3

Phasing : 0-45-90-135-180-225
: -270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950

Rack travel in mm : 13.95
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 211.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : + 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.50
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 41.00

Tolerance
cm³/1000 strokes : + 3.00

Check tolerance
cm³/1000S. : + 5.00

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.55
Tolerance mm : + 0.15

Rated speed rpm : 450
guide sleeve
travel mm : 2.95
Tolerance mm : + 0.15

Rated speed rpm : 800
guide sleeve
travel mm : 5.80
Tolerance mm : + 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 7.95
Tolerance mm : + 0.15

Rated speed rpm : 1200
guide sleeve
travel mm : 9.75
Tolerance mm : + 0.15

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 1145

Rack travel in mm : 10.00
Tolerance mm : + 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 211.00
Tolerance
cm³/1000 strokes : + 1.00
Check tolerance
cm³/1000S. : + 4.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.0
Rated speed rpm : 1145

rack travel mm : 12.90
Rated speed rpm : 995.0
Tolerance 1/min : + 5.0

rack travel mm : 4.00
Rated speed rpm : 1140.0
Tolerance 1/min : + 15.0

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 16.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 5.5

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 5.50
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.95
Tolerance mm : ± 0.05

Rated speed rpm : 650
rack travel mm : 13.30
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 13.80
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 6.20
Tolerance mm : ± 6.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 950
Pressure hPa : 900
rack travel mm : 13.95
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 950

rack travel mm : 8.90
Tolerance mm : ± 0.20

Pressure hPa : 230
rack travel mm : 10.25
Tolerance mm : ± 0.05

Pressure hPa : 535
rack travel mm : 12.80
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 270

Check
speed 1/min : 280

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 219.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spread
Tolerance
cm³/1000 strokes : 10.00
Check tolerance
cm³/1000S. : 14.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 146.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.20
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 165.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 5.50
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 41.00
Tolerance
cm³/1000 strokes : \pm 3.00
Check tolerance
cm³/1000S. : \pm 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.02.90
Test oil : ISO-4113
Combination No. : 0 402 748 803
Injection pump
Pump designation : PES8P120A920/4LS7184
EP type number : 0 412 728 802
Governor
Governor design. : RQV325...950PA848
: -22K
Governor no. : 0 421 815 202
Cust. part No. : 313GC5180P4

Customer-spec. information

Customer : MACK
Motor : E9 450
Power KW : 331.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 011
Overflow quantity
min. L/h : 165.0
Tolerance L/h : ± 5.0
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test Lines : 1 680 750 008
Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 23.0
Tolerance bar : ± 1.0
Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 12.00
Tolerance mm : ± 1.00
Firing order : 1- 2- 7- 8- 4- 5
: - 6- 3
Phasing : 0-45-90-135-180-225
: -270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 950
Rack travel in mm : 13.95
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 211.00
Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325.0

Rack travel in mm : 5.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 41.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 5.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 325
guide sleeve
travel mm : 1.55
Tolerance mm : ± 0.15

Rated speed rpm : 450
guide sleeve
travel mm : 2.95
Tolerance mm : ± 0.15

Rated speed rpm : 800
guide sleeve
travel mm : 5.80
Tolerance mm : ± 0.10

Rated speed rpm : 1050
guide sleeve
travel mm : 7.95
Tolerance mm : ± 0.15

Rated speed rpm : 1200
guide sleeve
travel mm : 9.75
Tolerance mm : ± 0.15

H01

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 1145

Rack travel in mm : 10.00
Tolerance mm : ± 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 950
Aneroid pressure
hPa : 900
Del. quantity
cm³/1000 strokes : 211.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spread
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 10.0
Rated speed rpm : 1145

rack travel mm : 12.90
Rated speed rpm : 995.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1140.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 16.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 325
rack travel mm : 5.5

Rated speed rpm : 275

CRT mm min. : 1.50

Testing:

Rated speed rpm : 325
rack travel mm : 5.50
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 950
rack travel mm : 13.95
Tolerance mm : ± 0.05

Rated speed rpm : 650
rack travel mm : 13.30
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 13.80
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 6.20
Tolerance mm : ± 6.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 950
Pressure hPa : 900
rack travel mm : 13.95
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 950
rack travel mm : 8.90
Tolerance mm : ± 0.20

Pressure hPa : 230
rack travel mm : 10.25
Tolerance mm : ± 0.05

H02

Pressure hPa : 535
rack travel mm : 12.80
Tolerance mm : ± 0.20

Start interlock

Rated speed rpm : 270

Check
speed 1/min : 280

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 219.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 10.00
Check tolerance
cm³/1000S. : 14.

Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 146.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 11.20
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 165.00
Tolerance
cm³/1000 strokes : ± 20.00
Check tolerance
cm³/1000S. : ± 30.00

LOW IDLE

Rated speed rpm : 325.0
Rack travel in mm : 5.50
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 41.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000s. : ± 5.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000s. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 05.03.90
Test oil : ISO-4113

Combination No. : 0 402 776 803

Injection pump
Pump designation : PES6P120A720LS7107
: -1
EP type number : 0 412 726 805

Governor
Governor design. : RSV350..750POA520-1
Governor no. : 0 421 833 262

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM447 A
Power KW : 180.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Overflow quantity
min. L/h : 110.0
Tolerance L/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

H04

Outside diameter : 6.00
x inside diameter : 3.00
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5
: - 3

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 14.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 225.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : +- 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350.0

Rack travel in mm : 5.65
Tolerance mm : +- 0.15

Del. quantity
cm³/1000 strokes : 17.00
Tolerance
cm³/1000 strokes : +- 3.00

Check tolerance
cm³/1000S. : +- 6.00

Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : -3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : +- 0.35

governor spring
pre-tension
click setting x : 2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 225.00
Tolerance
cm³/1000 strokes : +- 1.00
Check tolerance
cm³/1000S. : +- 4.00

H05

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 81.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 0.6
Rated speed rpm : 800

rack travel mm : 0.85
Tolerance mm : +- 0.85
Rated speed rpm : 1000

LOW IDLE

control lever
position degree : 67.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 5.6

Rated speed rpm : 100

CRT mm min. : 19.50

Testing:

Rated speed rpm : 350
rack travel mm : 5.65
Tolerance mm : +- 0.15

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 14.85
Tolerance mm : +- 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 750

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 320
rack travel mm : -1.70
Tolerance mm : ± 0.10
rack travel mm : -2.40
Tolerance mm : ± 0.10

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 240.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 350.0
Rack travel in mm : 5.65
Tolerance mm : ± 0.15
Del. quantity
cm³/1000 strokes : 17.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.03.90
Test oil : ISO-4113

Combination No. : 0 402 776 806

Injection pump
Pump designation : PES6P120A720LS7120
EP type number : 0 412 726 803

Governor
Governor design. : RSV350..1050POA529
 : -3
Governor no. : 0 421 833 317

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM447 A
Power KW : 213.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Overflow quantity
min. l/h : 110.0
Tolerance l/h : ± 10.0

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

H07

Outside diameter : 6.00
x inside diameter : 3.00
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 6- 2- 4- 1- 5
 : - 3

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 6

BASIC SETTING

Rated speed rpm : 650

Rack travel in mm : 14.10
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 203.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 4.00

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350.0

Rack travel in mm : 5.70
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 17.00
Tolerance
cm³/1000 strokes : ± 3.00

Check tolerance
cm³/1000S. : ± 6.00

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : -3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 650
Aneroid pressure
hPa : 650
Del. quantity
cm³/1000 strokes : 203.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spread

Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 52.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 0.5
Rated speed rpm : 800

rack travel mm : 12.30
Rated speed rpm : 1085.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1185.0
Tolerance 1/min : ± 15.0

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 26.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 5.7

Testing:

Rated speed rpm : 350
rack travel mm : 5.70
Tolerance mm : ± 0.10

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 650
rack travel mm : 14.10
Tolerance mm : ± 0.10

Rated speed rpm : 950
rack travel mm : 13.80
Tolerance mm : ± 0.10

Rated speed rpm : 875
rack travel mm : 14.30
Tolerance mm : ± 0.10

Rated speed rpm : 750
rack travel mm : 14.80
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 600

MEASUREMENT

Rated speed rpm : 600

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 1030
Del. quantity
cm³/1000 strokes : 195.50
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.50
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.

Aneroid pressure
hPa : 1200
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 221.50
Tolerance
cm³/1000 strokes : ± 2.50
Check tolerance
cm³/1000S. : ± 5.50
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.00

H09

Aneroid pressure
hPa :)

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 145.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 8.00
Check tolerance
cm³/1000S. : 12.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.00
Tolerance
cm³/1000 strokes : ± 10.00
Check tolerance
cm³/1000S. : ± 14.00

LOW IDLE

Rated speed rpm : 350.0
Rack travel in mm : 5.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 17.00
Tolerance
cm³/1000 strokes : ± 3.00
Check tolerance
cm³/1000S. : ± 6.00
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 02.10.89
Test oil : ISO-4113

Combination No. : 0 402 846 857A

Injection pump
Pump designation : PE6P130A72ORS7150
EP type number : 0 412 636 808

Governor
Governor design. : RQV250...900PA881
Governor no. : 0 421 813 676

Cust. part No. :

Customer-spec. information

Customer : VOLVO-CAR
Motor : TAMD 162 A (PD)
Power KW : 450.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 067

Outside diameter : 6.00

x inside diameter : 3.00
x length mm : 1000

H10

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
: - 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 384.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 5.00

Speed

Tolerance
 cm³/1000 strokes : 5.0

Check tolerance
 cm³/1000S. : 9.0

Rated speed rpm : 250.0

Rack travel in mm : 3.80
 Tolerance mm : ± 0.10

Del. quantity
 cm³/1000 strokes : 19.50
 Tolerance
 cm³/1000 strokes : ± 2.50
 Check tolerance
 cm³/1000S. : ± 5.00

Speed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 250
 guide sleeve
 travel mm : 1.10
 Tolerance mm : ± 0.20

Rated speed rpm : 350
 guide sleeve
 travel mm : 2.30
 Tolerance mm : ± 0.30

Rated speed rpm : 700
 guide sleeve
 travel mm : 4.20
 Tolerance mm : ± 0.30

Rated speed rpm : 1075
 guide sleeve
 travel mm : 8.20
 Tolerance mm : ± 0.10

Rated speed rpm : 1160
 guide sleeve
 travel mm : 9.50
 Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
 position degree : -1
 Rated speed rpm : 1100

Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
 Aneroid pressure
 hPa : 1200

Del. quantity
 cm³/1000 strokes : 384.00
 Tolerance
 cm³/1000 strokes : ± 1.00
 Check tolerance
 cm³/1000S. : ± 5.00

Speed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 119.0
 tolerance degree : ± 4.0

RATED SPEED
 rack travel mm : 16.5
 Rated speed rpm : 1100

rack travel mm : 11.60
 Rated speed rpm : 1075.0
 Tolerance 1/min : ± 5.0

rack travel mm : 4.00
 Rated speed rpm : 1160.0
 Tolerance 1/min : ± 15.0

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 67.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 3.8

Rated speed rpm : 100

CRT mm min. : 5.30

Testing:

Rated speed rpm : 250
rack travel mm : 3.80
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.65
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1200
rack travel mm : 12.65
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 340
rack travel mm : 0.25
Tolerance mm : ± 0.05

Pressure hPa : 970
rack travel mm : 3.65
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 217.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 5.00

LOW IDLE

Rated speed rpm : 250.0

Rack travel in mm : 3.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.50

Tolerance
cm³/1000 strokes : ± 2.50

Check tolerance
cm³/1000S. : ± 5.00

Spread
Tolerance

cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.12.89
Test oil : ISO-4113

Combination No. : 0 403 456 101

Injection pump
Pump designation : PES6MW100/321RS1153
EP type number : 0 413 406 145

Governor
Governor design. : RQ250/1300MW84
Governor no. : 0 420 082 029

Cust. part No. : 2-7724

Customer-spec. information

Customer : MAN
Motor : D 0826 LF
Power KW : 165.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

H13

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 134.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Spread

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 250.0

Rack travel in mm : 5.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.00

Tolerance
cm³/1000 strokes : ± 2.00

Check tolerance
cm³/1000S. : ± 4.50

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1440
guide sleeve
travel mm : 8.90
Tolerance mm : ± 0.20

Rated speed rpm : 1360
guide sleeve
travel mm : 6.40
Tolerance mm : ± 0.10

Rated speed rpm : 380
guide sleeve
travel mm : 4.40
Tolerance mm : ± 0.30

Rated speed rpm : 250
guide sleeve
travel mm : 1.70
Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
position degree : -2
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000

Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 134.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 30.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 20.0
Rated speed rpm : 600

rack travel mm : 10.50
Rated speed rpm : 1352.5
Tolerance 1/min : ± 7.5

rack travel mm : 4.00
Rated speed rpm : 1450.0
Tolerance 1/min : ± 10.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1530

LOW IDLE

control lever
position degree : 10.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 5.0

Rated speed rpm : 100

CRT mm min. : 7.00

Testing:

Rated speed rpm : 250
rack travel mm : 5.00
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.55
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
rack travel mm : 9.15
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 180
rack travel mm : 9.45
Tolerance mm : ± 0.05

Pressure hPa : 385
rack travel mm : 10.85
Tolerance mm : ± 0.15

Pressure hPa : 1000
rack travel mm : 11.55
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : 180

Check
speed 1/min : 200

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 130.50
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 5.00
Check tolerance
cm³/1000S. : 7.

Aneroid pressure
hPa : 1000
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 132.50
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.00

Rated speed rpm : 1300
Del. quantity
cm³/1000 strokes : 134.00
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 75.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 135.00
Tolerance
cm³/1000 strokes : ± 5.00
Check tolerance
cm³/1000S. : ± 8.00

LOW IDLE

Rated speed rpm : 250.0
Rack travel in mm : 5.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.50
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.12.89
Test oil : ISO-4113

Combination No. : 0 403 456 102

Injection pump
Pump designation : PES6MW100/321RS1153
EP type number : 0 413 406 145

Governor
Governor design. : RQV250...1300MW83
Governor no. : 0 420 083 139

Cust. part No. :

Customer-spec. information

Customer : MAN
Motor : D 0826 LF
Power KW : 165.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

H17

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 134.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 250.0

Rack travel in mm : 5.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.00

Tolerance
cm³/1000 strokes : ± 2.00

Check tolerance
cm³/1000S. : ± 4.50

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1450
guide sleeve
travel mm : 9.60
Tolerance mm : ± 0.20

Rated speed rpm : 1350
guide sleeve
travel mm : 8.50
Tolerance mm : ± 0.10

Rated speed rpm : 500
guide sleeve
travel mm : 3.00
Tolerance mm : ± 0.30

Rated speed rpm : 250
guide sleeve
travel mm : 1.00
Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
position degree : -1
Rated speed rpm : 1320

Rack travel in mm : 16.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 134.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 52.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 16.5
Rated speed rpm : 1320

rack travel mm : 10.50
Rated speed rpm : 1352.5
Tolerance 1/min : ± 7.5

rack travel mm : 4.00
Rated speed rpm : 1450.0
Tolerance 1/min : ± 10.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1600

LOW IDLE

control lever
position degree : 14.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 5.2

Rated speed rpm : 100

CRT mm min. : 7.00

Testing:

Rated speed rpm : 250
rack travel mm : 5.20
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.55
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
rack travel mm : 9.15
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 180
rack travel mm : 9.45
Tolerance mm : ± 0.05

Pressure hPa : 385
rack travel mm : 10.85
Tolerance mm : ± 0.15

Pressure hPa : 1000
rack travel mm : 11.55
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : 170

Check
speed 1/min : 200

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 130.50
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.00
Speed
Tolerance
cm³/1000 strokes : 5.00
Check tolerance
cm³/1000S. : 7.

Aneroid pressure
hPa : 1000
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 132.50
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.00

Rated speed rpm : 1300
Del. quantity
cm³/1000 strokes : 134.00
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 75.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 135.00
Tolerance
cm³/1000 strokes : ± 5.00
Check tolerance
cm³/1000S. : ± 8.00

LOW IDLE

Rated speed rpm : 250.0
Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 4.50
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.12.89
Test oil : ISO-4113

Combination No. : 0 403 456 102

Injection pump
Pump designation : PES6MW100/321RS1153
EP type number : 0 413 406 145

Governor
Governor design. : RQV250...1300MW83
Governor no. : 0 420 083 139

Cust. part No. : 2-7725

Customer-spec. information
Customer : MAN
Motor : D 0826 LF
Power KW : 165.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00
x inside diameter : 2.00
x length mm : 600

H21

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.55
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 134.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000s. : ± 3.00

Speed

Tolerance
 cm³/1000 strokes : 3.0

Check tolerance
 cm³/1000S. : 6.0

Rated speed rpm : 250.0

Rack travel in mm : 5.20
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 20.00
 Tolerance
 cm³/1000 strokes : ± 2.00
 Check tolerance
 cm³/1000S. : ± 4.50
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1450
 guide sleeve
 travel mm : 9.60
 Tolerance mm : ± 0.20

Rated speed rpm : 1350
 guide sleeve
 travel mm : 8.50
 Tolerance mm : ± 0.10

Rated speed rpm : 500
 guide sleeve
 travel mm : 3.00
 Tolerance mm : ± 0.30

Rated speed rpm : 250
 guide sleeve
 travel mm : 1.00
 Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
 position degree : -1
 Rated speed rpm : 1320

Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 134.00
 Tolerance
 cm³/1000 strokes : ± 1.00
 Check tolerance
 cm³/1000S. : ± 3.00
 Spreed
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 52.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 16.5
 Rated speed rpm : 1320

rack travel mm : 10.50
 Rated speed rpm : 1352.5
 Tolerance 1/min : ± 7.5

rack travel mm : 4.00
 Rated speed rpm : 1450.0
 Tolerance 1/min : ± 10.0

rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1600

LOW IDLE

control lever
 position degree : 14.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 5.2

Rated speed rpm : 100

CRT mm min. : 7.00

Testing:

Rated speed rpm : 250
rack travel mm : 5.20
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.55
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
rack travel mm : 9.15
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 180
rack travel mm : 9.45
Tolerance mm : ± 0.05

Pressure hPa : 385
rack travel mm : 10.85
Tolerance mm : ± 0.15

Pressure hPa : 1000
rack travel mm : 11.55
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : 170

Check
speed 1/min : 200

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 130.50
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 5.00
Check tolerance
cm³/1000S. : 7.

Aneroid pressure
hPa : 1000
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 132.50
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.00

Rated speed rpm : 1300
Del. quantity
cm³/1000 strokes : 134.00
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 75.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 135.00
Tolerance
cm³/1000 strokes : ± 5.00
Check tolerance
cm³/1000S. : ± 8.00

LOW IDLE

Rated speed rpm : 250.0
Rack travel in mm : 5.20
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 4.50
Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.12.89
Test oil : ISO-4113

Combination No. : 0 403 456 103

Injection pump
Pump designation : PES6MW100/321RS1153
EP type number : 0 413 406 145

Governor
Governor design. : RQV250...1100MW83-1
Governor no. : 0 420 083 182

Cust. part No. : 2-7947

Customer-spec. information
Customer : MAN
Motor : D 0826 L/217
Power KW : 150.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

H25

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 800

Rack travel in mm : 11.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 133.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Spread

Tolerance
 cm³/1000 strokes : 3.0

Check tolerance
 cm³/1000S. : 6.0

Rated speed rpm : 250.0

Rack travel in mm : 4.90
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 21.00
 Tolerance
 cm³/1000 strokes : + 2.00
 Check tolerance
 cm³/1000S. : + 4.50

Spread
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1210
 guide sleeve
 travel mm : 11.30
 Tolerance mm : + 0.20

Rated speed rpm : 1150
 guide sleeve
 travel mm : 10.30
 Tolerance mm : + 0.10

Rated speed rpm : 550
 guide sleeve
 travel mm : 3.50
 Tolerance mm : + 0.30

Rated speed rpm : 250
 guide sleeve
 travel mm : 1.30
 Tolerance mm : + 0.20

GUIDE SLEEVE POSITION

control lever
 position degree : -1
 Rated speed rpm : 1130

Rack travel in mm : 16.50
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 800
 Aneroid pressure
 hPa : 1000
 Del. quantity
 cm³/1000 strokes : 133.00
 Tolerance
 cm³/1000 strokes : + 1.00
 Check tolerance
 cm³/1000S. : + 3.00

Spread
 Tolerance
 cm³/1000 strokes : 3.0
 Check tolerance
 cm³/1000S. : 6.0

CONTROL LEVER

control lever
 position degree : 58.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 16.5
 Rated speed rpm : 1130

rack travel mm : 10.40
 Rated speed rpm : 1145.0
 Tolerance 1/min : + 5.0

rack travel mm : 4.00
 Rated speed rpm : 1210.0
 Tolerance 1/min : + 15.0

rack travel mm : 4.00

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
 position degree : 17.0
 tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 4.9

Rated speed rpm : 100

CRT mm min. : 7.00

Testing:

Rated speed rpm : 250
rack travel mm : 4.90
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 800
rack travel mm : 11.45
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
rack travel mm : 8.85
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 220
rack travel mm : 9.15
Tolerance mm : ± 0.05

Pressure hPa : 480
rack travel mm : 10.85
Tolerance mm : ± 0.15

Pressure hPa : 1000
rack travel mm : 11.45
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : 180

Check
speed 1/min : 200

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 130.50

Tolerance
cm³/1000 strokes : ± 1.50

Check tolerance
cm³/1000S. : ± 4.00

Speed
Tolerance
cm³/1000 strokes : 5.00

Check tolerance
cm³/1000S. : 7.

Aneroid pressure

hPa : 1000
Rated speed rpm : 1100

Del. quantity
cm³/1000 strokes : 133.00

Tolerance
cm³/1000 strokes : ± 1.50

Check tolerance
cm³/1000S. : ± 4.00

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 75.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 135.00

Tolerance
cm³/1000 strokes : ± 5.00

Check tolerance
cm³/1000S. : ± 8.00

LOW IDLE

Rated speed rpm : 250.0

Rack travel in mm : 4.90
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 21.00

Tolerance
cm³/1000 strokes : ± 2.00

Check tolerance
cm³/1000S. : ± 4.50
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.12.89
Test oil : ISO-4113

Combination No. : 0 403 456 104

Injection pump
Pump designation : PES6MW100/321RS1180
EP type number : 0 413 406 163

Governor
Governor design. : RQ250/1200MW84-1
Governor no. : 0 420 082 037

Cust. part No. : 2-7986

Customer-spec. information
Customer : MAN
Motor : D 0826 LUH
Power KW : 157.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

J01

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 11.65
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 127.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000s. : ± 3.00

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 250.0

Rack travel in mm : 5.30
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 20.00

Tolerance
cm³/1000 strokes : ± 2.00

Check tolerance
cm³/1000S. : ± 4.50

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1320
guide sleeve
travel mm : 8.80
Tolerance mm : ± 0.20

Rated speed rpm : 1260
guide sleeve
travel mm : 6.60
Tolerance mm : ± 0.10

Rated speed rpm : 350
guide sleeve
travel mm : 3.70
Tolerance mm : ± 0.30

Rated speed rpm : 250
guide sleeve
travel mm : 1.80
Tolerance mm : ± 0.30

GUIDE SLEEVE POSITION

control lever
position degree : -2
Rated speed rpm : 600

Rack travel in mm : 20.00
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000

Del. quantity
cm³/1000 strokes : 127.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 30.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 20.0
Rated speed rpm : 600

rack travel mm : 10.60
Rated speed rpm : 1252.5
Tolerance 1/min : ± 7.5

rack travel mm : 4.00
Rated speed rpm : 1320.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 10.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 5.3

Rated speed rpm : 100

CRT mm min. : 7.30

Testing:

Rated speed rpm : 250
rack travel mm : 5.30
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 1000
rack travel mm : 11.65
Tolerance mm : ± 0.05

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 500
rack travel mm : 9.35
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 200
rack travel mm : 9.65
Tolerance mm : ± 0.05

Pressure hPa : 400
rack travel mm : 11.05
Tolerance mm : ± 0.15

Pressure hPa : 1000
rack travel mm : 11.65
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : 180

Check
speed 1/min : 200

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000

Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 124.50

Tolerance
cm³/1000 strokes : ± 1.50

Check tolerance
cm³/1000S. : ± 4.00

Speed
Tolerance
cm³/1000 strokes : 5.00

Check tolerance
cm³/1000S. : 7.

Aneroid pressure

hPa : 1000

Rated speed rpm : 800

Del. quantity
cm³/1000 strokes : 127.00

Tolerance
cm³/1000 strokes : ± 1.50

Check tolerance
cm³/1000S. : ± 4.00

Rated speed rpm : 1200

Del. quantity
cm³/1000 strokes : 127.00

Tolerance
cm³/1000 strokes : ± 1.50

Check tolerance
cm³/1000S. : ± 4.00

Rated speed rpm : 500

Del. quantity
cm³/1000 strokes : 75.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

STARTING FUEL DELIVERY

Rated speed rpm : 100

Del. quantity
cm³/1000 strokes : 135.00

Tolerance
cm³/1000 strokes : ± 5.00

Check tolerance
cm³/1000S. : ± 8.00

LOW IDLE

Rated speed rpm : 250.0
Rack travel in mm : 5.30
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 20.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 4.50
Speed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.12.89
Test oil : ISO-4113

Combination No. : 0 403 456 105

Injection pump
Pump designation : PES6MW100/321RS1186
EP type number : 0 413 406 168

Governor
Governor design. : RQ250/1200MW04-2
Governor no. : 0 420 082 040

Cust. part No. : 3-7008

Customer-spec. information
Customer : MAN
Motor : D 0826 LUH
Power KW : 157.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

J05

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.50
Tolerance mm : ± 7.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1000

Rack travel in mm : 14.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 127.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 250.0

Rack travel in mm : 5.50
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 21.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.50
Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1280
guide sleeve
travel mm : 9.70
Tolerance mm : ± 0.20

Rated speed rpm : 1250
guide sleeve
travel mm : 7.60
Tolerance mm : ± 0.10

Rated speed rpm : 350
guide sleeve
travel mm : 5.50
Tolerance mm : ± 0.30

Rated speed rpm : 250
guide sleeve
travel mm : 2.50
Tolerance mm : ± 0.20

GUIDE SLEEVE POSITION

control lever
position degree : -2
Rated speed rpm : 600

Rack travel in mm : 15.50
Tolerance mm : ± 0.80

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
Aneroid pressure
hPa : 1000
Del. quantity
cm³/1000 strokes : 127.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00
Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 42.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 15.5
Rated speed rpm : 600

rack travel mm : 13.80
Rated speed rpm : 1252.5
Tolerance 1/min : ± 7.5

rack travel mm : 4.00
Rated speed rpm : 1300.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 12.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
rack travel mm : 5.5

Rated speed rpm : 100

CRT mm min. : 7.50

Testing:

Rated speed rpm : 250
rack travel mm : 5.50
Tolerance mm : ± 0.10

rack travel mm : 2.00

TORQUE CONTROL

Dimension a mm : 0.30
Rated speed rpm : 1000
rack travel mm : 14.75
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 14.85
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 14.85
Tolerance mm : ± 0.05

Rated speed rpm : 1200
rack travel mm : 14.35
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
rack travel mm : 12.25
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 200
rack travel mm : 12.75
Tolerance mm : ± 0.05

Pressure hPa : 400
rack travel mm : 13.95
Tolerance mm : ± 0.15

Pressure hPa : 1000
rack travel mm : 14.85

Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : 180

Check
speed 1/min : 200

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600
Del. quantity
cm³/1000 strokes : 128.00
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 5.00
Check tolerance
cm³/1000S. : 7.

Aneroid pressure
hPa : 1000
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 128.00
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.00

Rated speed rpm : 1200
Del. quantity
cm³/1000 strokes : 124.50
Tolerance
cm³/1000 strokes : ± 1.50
Check tolerance
cm³/1000S. : ± 4.00

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 75.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 135.00
Tolerance
cm³/1000 strokes : ± 5.00
Check tolerance
cm³/1000S. : ± 8.00

LOW IDLE

Rated speed rpm : 250.0

Rack travel in mm : 5.50
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 21.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.50
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.11.89
Test oil : ISO-4113

Combination No. : 0 403 466 121

Injection pump
Pump designation : PES6MW100/120RS1184
EP type number : 0 413 406 171

Governor
Governor design. : RSV375...125UMW2A334
Governor no. : 0 420 085 122

Cust. part No. : 3280646

Customer-spec. information
Customer : CUMMINS
Motor : 6 BTAA 5.9
Power KW : 157.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holder
assembly : 1 688 901 017

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.00

x inside diameter : 2.00
x length mm : 600

J09

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2
 : - 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 126.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 375.0

Rack travel in mm : 6.75
Tolerance mm : ± 0.25

Del. quantity
cm³/1000 strokes : 18.00

Tolerance
cm³/1000 strokes : ± 2.00

Check tolerance
cm³/1000S. : ± 4.50

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : -3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 800

Del. quantity
cm³/1000 strokes : 126.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Spread
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

CONTROL LEVER

control lever
position degree : 56.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 0.6
Rated speed rpm : 800

rack travel mm : 9.80
Rated speed rpm : 1300.0
Tolerance 1/min : ± 5.0

rack travel mm : 4.00
Rated speed rpm : 1385.0
Tolerance 1/min : ± 15.0

rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 1470

LOW IDLE

control lever
position degree : 32.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 375
rack travel mm : 5.7

Rated speed rpm : 100

CRT mm min. : 19.00

Testing:

Rated speed rpm : 375
rack travel mm : 6.75
Tolerance mm : ± 0.25

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.85
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
rack travel mm : 9.35
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 490
rack travel mm : 10.25
Tolerance mm : ± 0.05

Pressure hPa : 550
rack travel mm : 10.55
Tolerance mm : ± 0.15

Pressure hPa : 800
rack travel mm : 10.85
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 81.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00
Speed
Tolerance
cm³/1000 strokes : 5.00
Check tolerance
cm³/1000S. : 7.00

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 135.00
Tolerance
cm³/1000 strokes : ± 5.00
Check tolerance
cm³/1000S. : ± 8.00

LOW IDLE

Rated speed rpm : 375.0

Rack travel in mm : 6.75
Tolerance mm : ± 0.25

Del. quantity
cm³/1000 strokes : 18.00

Tolerance
cm³/1000 strokes : ± 2.00

Check tolerance
cm³/1000S. : ± 4.50

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 01.02.90
Test oil : ISO-4113

Combination No. : 0 403 474 005

Injection pump
Pump designation : PES4MW100/720RS1127
EP type number : 0 413 404 103

Governor
Governor design. : RSV350...750MM:0A318
 : -4
Governor no. : 0 420 085 089

Cust. part No. :

Customer-spec. information
Customer : DB
Motor : OM364A
Power KW : 63.0

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40.0
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.50

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 015

Outside diameter : 6.00

x inside diameter : 3.00

x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 31.0
Tolerance bar : ± 1.0

Prestroke mm : 3.75
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 13.85
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 96.00

Tolerance
cm³/1000 strokes : ± 1.00

Check tolerance
cm³/1000S. : ± 3.00

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 6.0

Rated speed rpm : 350.0

Rack travel in mm : 7.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 11.00
Tolerance
cm³/1000 strokes : ± 2.00
Check tolerance
cm³/1000S. : ± 4.00
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : -3
Rated speed rpm : 800

Rack travel in mm : 0.65
Tolerance mm : ± 0.35

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 96.00
Tolerance
cm³/1000 strokes : ± 1.00
Check tolerance
cm³/1000S. : ± 3.00
Spreed
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 6.0

RATED SPEED

rack travel mm : 0.6
Rated speed rpm : 800

rack travel mm : 4.00

rack travel mm : 4.00

rack travel mm : 1.00
Tolerance mm : ± 0.70
Rated speed rpm : 800

LOW IDLE

control lever
position degree : 65.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 7.6

Testing:

Rated speed rpm : 350
rack travel mm : 7.60
Tolerance mm : ± 0.10

rack travel mm : 2.00

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 13.85
Tolerance mm : ± 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 95.00
Tolerance
cm³/1000 strokes : ± 5.00
Check tolerance
cm³/1000S. : ± 8.00

LOW IDLE

Rated speed rpm : 350.0

Rack travel in mm : 7.60
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.00
Tolerance
cm³/1000 strokes : \pm 2.00
Check tolerance
cm³/1000S. : \pm 4.00
Spread
Tolerance
cm³/1000 strokes : 3.0
Check tolerance
cm³/1000S. : 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 11.07.97
Test oil : ISO 4113

Combination No. : F 000 409 204

Injection pump
Pump designation : PES6A95D410RS2812
EP type number : 9 400 084 028

Governor
Governor design. : RQV350...1300AB1327L
Governor no. : F 000 420 303

Cust. part No. :

Customer-spec. information
Customer : MWM
Motor : 6.10 TCA EURO I
Power KW : 152.0

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1300

Rack travel in mm : 13.15
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 111.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 8.0

Rated speed rpm : 350

Rack travel in mm : 6.40
 Tolerance mm : ± 0.10

Del. quantity
 cm³/1000 strokes : 16.0
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5

Speed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 800
 guide sleeve
 travel mm : 3.95
 Tolerance mm : ± 0.25

Rated speed rpm : 1350
 guide sleeve
 travel mm : 7.20
 Tolerance mm : ± 0.10

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.05
 Tolerance mm : ± 0.25

Rated speed rpm : 550
 guide sleeve
 travel mm : 2.75
 Tolerance mm : ± 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 8.55
 Tolerance mm : ± 0.25

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1480

Rack travel in mm : 16.50
 Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1300
 Aneroid pressure
 hPa : 900
 Del. quantity
 cm³/1000 strokes : 111.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0

Speed
 Tolerance
 cm³/1000 strokes : 3.5
 Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 113.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 12.10
 Rated speed rpm : 1360
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1545
 Tolerance 1/min : ± 15

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1730

LOW IDLE

control lever
 position degree : 68.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 8.50

Testing:

Rated speed rpm : 350
rack travel mm : 6.40
Tolerance mm : ± 0.10

Rated speed rpm : 390

TORQUE CONTROL

Rated speed rpm : 1300
rack travel mm : 13.15
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 13.15
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.15
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 350
rack travel mm : 2.50
Tolerance mm : ± 0.10

Pressure hPa : 200
rack travel mm : 1.10
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 200

Check speed 1/min : > 80

Check speed 1/min : < 220

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 109.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000s. : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 52.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000s. : 8.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 146.5
Tolerance
cm³/1000 strokes : ± 8.0
Check tolerance
cm³/1000s. : ± 11.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 6.40
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 16.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000s. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000s. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 29.11.96
Test oil : ISO 4113

Combination No. : 0 400 846 258

Injection pump
Pump designation : PES6A90D410RS2293Z
EP type number : 0 410 896 037

Governor
Governor design. : RQV300...1425AB740L
Governor no. : 0 420 212 037

Cust. part No. :

Customer-spec. information
Customer : MB-NFZ

TEST BENCH REQUIREMENTS

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Inlet press. bar : 1.5

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

BASIC SETTING

Del. quantity
cm3/1000 strokes : 74.5

Tolerance
cm3/1000 strokes : ± 0.5

Check tolerance
cm3/1000S. : ± 2.5

Speed

Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 4.5

Rated speed rpm : 300

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1375
Aneroid pressure
hPa : -

Del. quantity
cm3/1000 strokes : 74.5

Tolerance
cm3/1000 strokes : ± 0.5

Check tolerance
cm3/1000S. : ± 2.5

Speed
Tolerance
cm3/1000 strokes : 3.0

Check tolerance
cm3/1000S. : 4.5

RATED SPEED

rack travel mm : 4.00

rack travel mm : 4.00

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 100

Testing:

rack travel mm : 2.00

Start interlock

Rated speed rpm : > 100

Check
speed 1/min : > 80

STARTING FUEL DELIVERY

Rated speed rpm : 100

LOW IDLE

Rated speed rpm : 300

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) 4400/...

Edition : 10.07.97
Test oil : ISO 4113

Combination No. : 0 400 846 597

Injection pump
Pump designation : PES6A90D410RS2813
EP type number : 0 410 896 089

Governor
Governor design. : RQV300...1250AB1264L
Governor no. : 0 420 212 233

Cust. part No. :

Customer-spec. information
Customer : IVECO-FIAT
Motor : 8065.25.000
Power kW : 145.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 77.0

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

Rated speed rpm : 325

Rack travel in mm : 8.30
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 13.0

Tolerance
cm³/1000 strokes : +- 2.0

Check tolerance
cm³/1000S. : +- 4.0

Speed
Tolerance
cm³/1000 strokes : 4.5

Check tolerance
cm³/1000S. : 7.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 897
guide sleeve
travel mm : 5.25
Tolerance mm : +- 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 0.85
Tolerance mm : +- 0.25

Rated speed rpm : 445
guide sleeve
travel mm : 2.45
Tolerance mm : +- 0.25

Rated speed rpm : 540
guide sleeve
travel mm : 3.05
Tolerance mm : +- 0.25

Rated speed rpm : 1324
guide sleeve
travel mm : 8.25
Tolerance mm : +- 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1455

Rack travel in mm : 10.90
Tolerance mm : +- 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 77.0

Tolerance
cm³/1000 strokes : +- 0.5

Check tolerance
cm³/1000S. : +- 2.5

Speed
Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 7.0

CONTROL LEVER

control lever
position degree : 105.0
tolerance degree : +- 4.0

RATED SPEED
rack travel mm : 10.30
Rated speed rpm : 1320
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1435
Tolerance 1/min : +- 15

rack travel mm : 0.50
Tolerance mm : +- 0.50
Rated speed rpm : 1550

LOW IDLE

control lever
position degree : 79.0
tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 225
CRT mm min. : > 10.00

Testing:

Rated speed rpm : 325
rack travel mm : 8.30
Tolerance mm : ± 0.10

Rated speed rpm : 425

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 11.30
Tolerance mm : ± 0.05

Rated speed rpm : 400
rack travel mm : 12.85
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 12.30
Tolerance mm : ± 0.10

Rated speed rpm : 900
rack travel mm : 11.60
Tolerance mm : ± 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 700
rack travel mm : 12.50
Tolerance mm : ± 0.05

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 10.80
Tolerance mm : ± 0.05

MEASUREMENT

Rated speed rpm : 400
Pressure hPa : 350
rack travel mm : 12.10
Tolerance mm : ± 0.10

Pressure hPa : 320
rack travel mm : 11.65
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80

Check
speed 1/min : < 250

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 80.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 51.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5

STARTING FUEL DELIVERY

ESS test: With 12 V solenoid activated,
rack must reach start position in max.
control lever setting.

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Rated speed rpm : 325

Rack travel in mm : 8.30
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 13.0
Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000s. : ± 4.0

Spreed
Tolerance
cm³/1000 strokes : 4.5
Check tolerance
cm³/1000s. : 7.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.97
Test oil : ISO 4113

Combination No. : 0 400 864 108

Injection pump
Pump designation : PES4A95D410/3RS2789
EP type number : 0 410 894 995

Governor
Governor design. : RS325...1250ADC916L
Governor no. : 0 420 220 014

Cust. part No. : 0423 2128 KY

Customer-spec. information
Customer : KHD-DMI
Motor : F4L913
Power kW : 59.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holder
assembly : 0 681 343 009

Opening pressure
bar : 173.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 014

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.00
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 3- 4- 2

Phasing : 0-90-180-270
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 11.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 76.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Speed

Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 8.0

Rated speed rpm : 325

Rack travel in mm : 8.80
 Tolerance mm : ± 0.10

Del. quantity
 cm³/1000 strokes : 11.5
 Tolerance
 cm³/1000 strokes : ± 2.0
 Check tolerance
 cm³/1000S. : ± 4.5

Spreed
 Tolerance
 cm³/1000 strokes : 5.5
 Check tolerance
 cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : FREE
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : ± 0.20

governor spring
 pre-tension
 click setting x : 3.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1250
 Aneroid pressure
 hPa : -

Del. quantity
 cm³/1000 strokes : 76.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 3.0

Spreed
 Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 8.0

CONTROL LEVER

control lever
 position degree : 87.0
 tolerance degree : ± 4.0

RATED SPEED
 rack travel mm : 10.35
 Rated speed rpm : 1295
 Tolerance 1/min : ± 5

rack travel mm : 4.00
 Rated speed rpm : 1355
 Tolerance 1/min : ± 15

rack travel mm : 0.85
 Tolerance mm : ± 0.55
 Rated speed rpm : 1505

LOW IDLE

Testing:

Rated speed rpm : 325
 rack travel mm : 8.80
 Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1250
 rack travel mm : 11.35
 Tolerance mm : ± 0.05

STARTING FUEL DELIVERY

Rated speed rpm : 100
 rack travel mm : 20.25
 Tolerance mm : ± 0.75

Del. quantity
 cm³/1000 strokes : 120.0
 Tolerance
 cm³/1000 strokes : ± 7.5
 Check tolerance
 cm³/1000S. : ± 10.0

LOW IDLE

Rated speed rpm : 325
Rack travel in mm : 8.80
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 11.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Spreed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.97
Test oil : ISO 4113
Combination No. : 0 400 866 197
Injection pump
Pump designation : PES6A100D320/3RS2691
 : -4
EP type number : 9 410 230 030
Governor
Governor design. : RSV450...1100AOC2238
 : -3R
Governor no. : 0 420 233 330
Cust. part No. :

Customer-spec. information
Customer : CDC
Motor : 6 CT 830
Power KW : 151.0

TEST BENCH REQUIREMENTS

Inlet line : 2.
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 1 688 901 101
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 28.0
Tolerance bar : ± 1.0
Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
 : 4
Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75
Start of delivery mark
*NW after s.o.d. : 11.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.15
 Tolerance mm : +- 0.05

Del. quantity
 cm³/1000 strokes : 120.5

Tolerance
 cm³/1000 strokes : +- 1.0

Check tolerance
 cm³/1000S. : +- 3.5

Spread

Tolerance
 cm³/1000 strokes : 4.0

Check tolerance
 cm³/1000S. : 6.5

Rated speed rpm : 450

Rack travel in mm : 5.70
 Tolerance mm : +- 0.10

Del. quantity
 cm³/1000 strokes : 18.0

Tolerance
 cm³/1000 strokes : +- 2.0

Check tolerance
 cm³/1000S. : +- 4.5

Spread

Tolerance
 cm³/1000 strokes : 6.0

Check tolerance
 cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : +- 0.20

governor spring
 pre-tension
 click setting x : 4.25

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : 900

Del. quantity
 cm³/1000 strokes : 120.5

Tolerance
 cm³/1000 strokes : +- 1.0

Check tolerance
 cm³/1000S. : +- 3.5

Spread

Tolerance
 cm³/1000 strokes : 4.0

Check tolerance
 cm³/1000S. : 6.5

CONTROL LEVER

control lever
 position degree : 96.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 4.00
 Rated speed rpm : 1210
 Tolerance 1/min : +- 15

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1143
 rack travel mm : 11.15

Rated speed rpm : 1200
 Tolerance 1/min : +- 5
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : +- 0.55
 Rated speed rpm : 1360

Rated speed rpm : 1144
 rack travel mm : 11.15

Rated speed rpm : 1201
 Tolerance 1/min : +- 5
 rack travel mm : 4.00

rack travel mm : 0.85
 Tolerance mm : +- 0.55

Rated speed rpm : 1145
 rack travel mm : 11.15

Rated speed rpm : 1202
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55

Rated speed rpm : 1146
rack travel mm : 11.15

Rated speed rpm : 1203
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55

Rated speed rpm : 1147
rack travel mm : 11.15

Rated speed rpm : 1204
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55

Rated speed rpm : 1148
rack travel mm : 11.15

Rated speed rpm : 1205
Tolerance 1/min : + 5
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : + 0.55

LOW IDLE

control lever
position degree : 74.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 450
rack travel mm : 5.20
Tolerance mm : + 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

K02

Rated speed rpm : 450
rack travel mm : 5.70
Tolerance mm : + 0.10

rack travel mm : 2.00
Rated speed rpm : 515
Tolerance 1/min : + 30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.15
Tolerance mm : + 0.05

Rated speed rpm : 750
rack travel mm : 13.10
Tolerance mm : + 0.10

Rated speed rpm : 1100
rack travel mm : 11.15
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 900
rack travel mm : 13.10
Tolerance mm : + 0.10

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 10.45
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 560
rack travel mm : 12.35
Tolerance mm : + 0.20

Pressure hPa : 385
rack travel mm : 11.45
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 750

Del. quantity
cm³/1000 strokes : 137.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 82.5
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.00
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 146.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 13.0

LOW IDLE

Rated speed rpm : 450
Rack travel in mm : 5.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.04.97
Test oil : ISO 4113

Combination No. : 0 400 866 219

Injection pump
Pump designation : PES6A95D12ORS2860
EP type number : 0 410 896 889

Governor
Governor design. : RSV410...1050AOC2260
: -3R
Governor no. : 0 420 233 344

Cust. part No. : 32 82 684

Customer-spec. information
Customer : CUMMINS
Motor : 6 BT
Power KW : 113.0

TEST BENCH REQUIREMENTS

Inlet line : 1.3

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 419 992 198

Inlet press. bar : 1.5

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

K04

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.15
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 11.50

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 10.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 97.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 3.5

Check tolerance
cm³/1000S. : 8.0

Rated speed rpm : 430

Rack travel in mm : 7.20
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5

Spread
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 1.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

K05

Aneroid pressure
hPa : 1100

Del. quantity
cm³/1000 strokes : 97.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 8.0

CONTROL LEVER

control lever
position degree : 90.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.90
Rated speed rpm : 1095
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1140
Tolerance 1/min : ± 15

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1330

rack travel mm : 4.00
Rated speed rpm : 1175
Tolerance 1/min : ± 15

LOW IDLE

control lever
position degree : 70.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 430
rack travel mm : 6.70
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 430
rack travel mm : 7.20
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 590
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 10.90
Tolerance mm : ± 0.05

Rated speed rpm : 450
rack travel mm : 11.80
Tolerance mm : ± 0.10

Rated speed rpm : 550
rack travel mm : 11.50
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 450
Pressure hPa : 1100
rack travel mm : 11.80
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.80
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 450
Pressure hPa : 420
rack travel mm : 10.10
Tolerance mm : ± 0.10

Pressure hPa : 730
rack travel mm : 10.95
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1100
Rated speed rpm : 450

Del. quantity
cm³/1000 strokes : 98.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

Aneroid pressure

hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 67.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.00
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : ± 7.5
Check tolerance
cm³/1000S. : ± 10.0

LOW IDLE

Rated speed rpm : 430
Rack travel in mm : 7.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 5.5
Check tolerance
cm³/1000S. : 9.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.07.97
Test oil : ISO 4113
Combination No. : 0 400 876 188
Injection pump
Pump designation : PES6A80D410RS2085X
EP type number : 0 410 886 045
Governor
Governor design. : RSV350...1400A2C1052
: L
Governor no. : 0 420 232 406
Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : GM352
Power kW : 80.9

TEST BENCH REQUIREMENTS

Inlet line : 1.2
Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder assembly : 0 681 343 009
Opening pressure bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

K07

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

BASIC SETTING

Rated speed rpm : 1400

Rack travel in mm : 9.05
Tolerance mm : ± 0.05

Del. quantity cm³/1000 strokes : 52.5

Tolerance cm³/1000 strokes : ± 0.5

Check tolerance cm³/1000S. : ± 2.0

Spread

Tolerance cm³/1000 strokes : 2.5

Check tolerance cm³/1000S. : 4.0

Rated speed rpm : 350

Del. quantity cm³/1000 strokes : 11.0

Tolerance cm³/1000 strokes : ± 1.0

Check tolerance cm³/1000S. : ± 2.5

Speed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 5.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400
Aneroid pressure
hPa : -
Del. quantity
cm³/1000 strokes : 52.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.0

CONTROL LEVER

control lever
position degree : 112.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1680

rack travel mm : 4.00
Rated speed rpm : 1530

K08

Tolerance 1/min : ± 15

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 6.70
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

rack travel mm : 2.00
Rated speed rpm : 530
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 9.05
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 9.95
Tolerance mm : ± 0.05

Rated speed rpm : 850
rack travel mm : 9.60
Tolerance mm : ± 0.10

Rated speed rpm : 950
rack travel mm : 9.25
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 48.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

Aneroid pressure
hPa : -

Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 3.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 14.40
Tolerance mm : ± 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : ± 5.0
Check tolerance
cm³/1000S. : ± 8.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 2.5
Spreed
Tolerance
cm³/1000 strokes : 2.0
Check tolerance
cm³/1000S. : 3.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.97
Test oil : ISO 4113
Combination No. : 0 400 876 293
Injection pump
Pump designation : PES6A90D410RS2596
EP type number : 0 410 896 073
Governor
Governor design. : RSV350...1400A0C1141
: L
Governor no. : 0 420 232 423
Cust. part No. :

Customer-spec. information
Customer : MB-NFZ
Motor : OM352A
Power KW : 123.0

TEST BENCH REQUIREMENTS

Inlet line : 1.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 419 992 198
Inlet press. bar : 1.5
Test nozzle holder
assembly : 0 681 343 009
Opening pressure
bar : 173.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 014
Outside diameter : 6.0

K10

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 2.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1400
Rack travel in mm : 11.95
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 74.5
Tolerance
cm³/1000 strokes : ± 0.5
Check tolerance
cm³/1000S. : ± 2.5
Speed

Tolerance
cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

Rated speed rpm : 350

Del. quantity
cm³/1000 strokes : 11.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance

cm³/1000 strokes : 2.5

Check tolerance
cm³/1000S. : 4.5

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : ± 0.20

governor spring
pre-tension
click setting x : 4.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1400

Aneroid pressure
hPa : 700

Del. quantity
cm³/1000 strokes : 74.5

Tolerance
cm³/1000 strokes : ± 0.5

Check tolerance
cm³/1000S. : ± 2.5

Spread
Tolerance

cm³/1000 strokes : 3.0

Check tolerance
cm³/1000S. : 4.5

CONTROL LEVER

control lever
position degree : 114.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1680

rack travel mm : 4.00
Rated speed rpm : 1535
Tolerance 1/min : ± 15

LOW IDLE

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 8.10
Tolerance mm : ± 0.10

Rated speed rpm : 100

CRT mm min. : > 16.00

Testing:

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1400
rack travel mm : 11.95
Tolerance mm : ± 0.05

Rated speed rpm : 900
rack travel mm : 13.05
Tolerance mm : ± 0.05

Rated speed rpm : 1050
rack travel mm : 12.80
Tolerance mm : ± 0.10

Rated speed rpm : 1260
rack travel mm : 11.95
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 13.15
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 11.35
Tolerance mm : \pm 0.05

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 340
rack travel mm : 11.70
Tolerance mm : \pm 0.10

Pressure hPa : 500
rack travel mm : 12.65
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 76.5
Tolerance
cm³/1000 strokes : \pm 1.5
Check tolerance
cm³/1000S. : \pm 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 50.5
Tolerance
cm³/1000 strokes : \pm 0.5
Check tolerance
cm³/1000S. : \pm 2.5

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 16.30
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 83.0
Tolerance
cm³/1000 strokes : \pm 5.0
Check tolerance
cm³/1000S. : \pm 8.0

LOW IDLE

Rated speed rpm : 350
Del. quantity
cm³/1000 strokes : 11.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 3.0
Speed
Tolerance
cm³/1000 strokes : 2.5
Check tolerance
cm³/1000S. : 4.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.07.97
Test oil : ISO 4113

Combination No. : F 002 A0Z 050

Injection pump
Pump designation : PES6A95D320/3RS2916
EP type number : F 002 A10 010

Governor
Governor design. : RSV425...1050A0C930R
Governor no. : F 002 A20 236

Cust. part No. : 328 3917

Customer-spec. information
Customer : CUMMINS
Motor : 6BT
Power KW : 100.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

K13

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.29

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.25
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes :	98.2
<hr/>	
Tolerance	
cm ³ /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	+ 3.0
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm ³ /1000 strokes :	4.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	6.0
<hr/>	

Rated speed rpm : 425

Rack travel in mm :	5.05
Tolerance mm :	+ 0.10
Del. quantity	
cm ³ /1000 strokes :	18.5
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S. :	+ 4.5
Spreed	
Tolerance	
cm ³ /1000 strokes :	6.0
Check tolerance	
cm ³ /1000S. :	8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree :	FREE
Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	2.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050

Aneroid pressure	
hPa :	900
Del. quantity	
cm ³ /1000 strokes :	98.2
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 3.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	4.0
Check tolerance	
cm ³ /1000S. :	6.0

CONTROL LEVER

control lever	
position degree :	100.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	10.25
Rated speed rpm :	1115
Tolerance 1/min :	+ 5

rack travel mm :	4.50
Rated speed rpm :	1170
Tolerance 1/min :	+ 5

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1275

rack travel mm :	4.50
Rated speed rpm :	1170
Tolerance 1/min :	+ 15

LOW IDLE

control lever	
position degree :	80.0
tolerance degree :	+ 4.0

Control lever difference	
Grad :	20.0
tolerance degree :	+ 6.0

Setting point w/out bumper spring

Rated speed rpm :	425
rack travel mm :	4.55
Tolerance mm :	+ 0.10

Rated speed rpm : 100

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 425
rack travel mm : 5.05
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 500
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 11.25
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 11.80
Tolerance mm : ± 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 650
Pressure hPa : 900

Rated speed rpm : 650
Pressure hPa : -
rack travel mm : 10.00
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 650
Pressure hPa : 650
rack travel mm : 11.65
Tolerance mm : ± 0.20

Pressure hPa : 400
rack travel mm : 10.70
Tolerance mm : ± 0.20

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 900
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 106.2

K15

Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 82.9
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 3.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 121.5
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 15.0

LOW IDLE

Rated speed rpm : 425
Rack travel in mm : 5.05
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Speed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 06.01.97
Test oil : ISO 4113

Combination No. : 0 403 466 174

Injection pump
Pump designation : PES6MW100/120RS1238
EP type number : 0 413 406 237

Governor
Governor design. : RSV500...1100MWDA398
Governor no. : 0 420 085 287

Cust. part No. : 3930122

Customer-spec. information
Customer : CDC
Motor : 6 CT
Power KW : 112.5

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

K16

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.80
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 7.50
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

Beginning of delivery difference

and maximum rack
travel : 15.00
Difference *CS : 2.00

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 9.95
 Tolerance mm : ± 0.05

Del. quantity
 cm³/1000 strokes : 112.0

Tolerance
 cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : ± 4.0

Speed

Tolerance
 cm³/1000 strokes : 4.0

Check tolerance
 cm³/1000S. : 7.5

Rated speed rpm : 500

Rack travel in mm : 5.60
 Tolerance mm : ± 0.10

Del. quantity
 cm³/1000 strokes : 25.0

Tolerance
 cm³/1000 strokes : ± 2.0

Check tolerance
 cm³/1000S. : ± 4.5

Speed

Tolerance
 cm³/1000 strokes : 3.5

Check tolerance
 cm³/1000S. : 5.5

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
 position degree : - 3
 Rated speed rpm : 800

Rack travel in mm : 0.50
 Tolerance mm : ± 0.20

governor spring
 pre-tension
 click setting x : 3.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
 Aneroid pressure
 hPa : -

Del. quantity
 cm³/1000 strokes : 112.0

Tolerance
 cm³/1000 strokes : ± 1.0

Check tolerance
 cm³/1000S. : ± 4.0

Speed

Tolerance
 cm³/1000 strokes : 4.0

Check tolerance
 cm³/1000S. : 7.5

CONTROL LEVER

control lever
 position degree : 102.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 8.90
 Rated speed rpm : 1165
 Tolerance 1/min : ± 5

rack travel mm : 6.00
 Rated speed rpm : 1230
 Tolerance 1/min : ± 5

rack travel mm : 1.00
 Tolerance mm : ± 0.70
 Rated speed rpm : 1400

rack travel mm : 6.00
 Rated speed rpm : 1230
 Tolerance 1/min : ± 15

LOW IDLE

control lever
 position degree : 88.0
 tolerance degree : ± 4.0

Control lever difference
 Grad : 14.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 500
rack travel mm : 5.10
Tolerance mm : ± 0.10

Rated speed rpm : 100
CRT mm min. : > 19.00

Testing:

Rated speed rpm : 500
rack travel mm : 5.60
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 9.95
Tolerance mm : ± 0.05

Rated speed rpm : 750
rack travel mm : 10.60
Tolerance mm : ± 0.10

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure

hPa : -
Rated speed rpm : 750
Del. quantity
cm³/1000 strokes : 122.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 9.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 1.00
Del. quantity
cm³/1000 strokes : 177.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 13.0

LOW IDLE

Rated speed rpm : 500
Rack travel in mm : 5.60
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 25.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 4.5
Spreed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.97
Test oil : ISO 4113

Combination No. : 9 400 030 732

Injection pump
Pump designation : PES6A95D320/3RS2881
EP type number : 9 410 037 215

Governor
Governor design. : RSV475...1250A0C845R
Governor no. : 9 420 034 711

Cust. part No. : 3929407

Customer-spec. information
Customer : CDC
Motor : 6BT
Power KW : 97.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 093

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 014

Outside diameter : 6.0

K19

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 17.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery blocking

*NW after s.o.d. : 7.00
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1250

Rack travel in mm : 10.80
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes :	88.5
<hr/>	
Tolerance	
cm ³ /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	+ 3.0
<hr/>	
Spread	
<hr/>	
Tolerance	
cm ³ /1000 strokes :	3.5
<hr/>	
Check tolerance	
cm ³ /1000S. :	6.0
<hr/>	

Rated speed rpm :	475
<hr/>	
Rack travel in mm :	5.10
Tolerance mm :	+ 0.10
Del. quantity	
cm ³ /1000 strokes :	18.5
Tolerance	
cm ³ /1000 strokes :	+ 2.0
Check tolerance	
cm ³ /1000S. :	+ 4.5
Spread	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S. :	5.5

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever	
position degree :	- 3
Rated speed rpm :	800
<hr/>	
Rack travel in mm :	0.50
Tolerance mm :	+ 0.20
<hr/>	
governor spring	
pre-tension	
click setting x :	5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	1250
-------------------	------

K20

Aneroid pressure	
hPa :	-
Del. quantity	
cm ³ /1000 strokes :	88.5
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 3.0
Spread	
Tolerance	
cm ³ /1000 strokes :	3.5
Check tolerance	
cm ³ /1000S. :	6.0

CONTROL LEVER

control lever	
position degree :	117.0
tolerance degree :	+ 4.0

RATED SPEED

rack travel mm :	9.80
Rated speed rpm :	1310
Tolerance 1/min :	+ 5

rack travel mm :	5.50
Rated speed rpm :	1370
Tolerance 1/min :	+ 5

rack travel mm :	0.85
Tolerance mm :	+ 0.55
Rated speed rpm :	1500

rack travel mm :	5.50
Rated speed rpm :	1370
Tolerance 1/min :	+ 15

LOW IDLE

control lever	
position degree :	91.0
tolerance degree :	+ 4.0

Control lever difference

Grad :	26.0
tolerance degree :	+ 4.0

Setting point w/out bumper spring

Rated speed rpm :	475
rack travel mm :	4.60
Tolerance mm :	+ 0.10

Rated speed rpm :	100
-------------------	-----

CRT mm min. : > 19.00

Testing:

Rated speed rpm : 475
rack travel mm : 5.10
Tolerance mm : \pm 0.10

TORQUE CONTROL

Rated speed rpm : 1250
rack travel mm : 10.80
Tolerance mm : \pm 0.05

Rated speed rpm : 800
rack travel mm : 11.20
Tolerance mm : \pm 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : -

MEASUREMENT

Pressure hPa : 800
rack travel mm : 10.80
Tolerance mm : \pm 0.30

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 94.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : \pm 0.50
Del. quantity
cm³/1000 strokes : 120.5

Tolerance
cm³/1000 strokes : \pm 10.0
Check tolerance
cm³/1000S. : \pm 15.0

LOW IDLE

Rated speed rpm : 475

Rack travel in mm : 5.10
Tolerance mm : \pm 0.10
Del. quantity
cm³/1000 strokes : 18.5
Tolerance
cm³/1000 strokes : \pm 2.0
Check tolerance
cm³/1000S. : \pm 4.5
Speed
Tolerance
cm³/1000 strokes : 3.5
Check tolerance
cm³/1000S. : 5.5

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.97
Test oil : ISO 4113

Combination No. : 0 401 846 843

Injection pump
Pump designation : PE6P120A720RS3069
EP type number : 0 411 826 712

Governor
Governor design. : RQV300...1000PA501
: -4
Governor no. : 0 421 813 609

Cust. part No. :

Customer-spec. information

Customer : IVECO-FIAT
Motor : 8210.22.371

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Del. quantity
cm3/1000 strokes : 206.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 4.0

Spread
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 300
 Rack travel in mm :
 Tolerance mm : +
 Del. quantity
 cm³/1000 strokes : 20.0
 Tolerance
 cm³/1000 strokes : +- 3.0
 Check tolerance
 cm³/1000S. : +- 6.0
 Spreed
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1000
 guide sleeve
 travel mm : 8.10
 Tolerance mm : +- 0.15

Rated speed rpm : 325
 guide sleeve
 travel mm : 1.70
 Tolerance mm : +- 0.20

Rated speed rpm : 450
 guide sleeve
 travel mm : 3.10
 Tolerance mm : +- 0.20

Rated speed rpm : 800
 guide sleeve
 travel mm : 5.90
 Tolerance mm : +- 0.20

Rated speed rpm : 1300
 guide sleeve
 travel mm : 11.50
 Tolerance mm : +- 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1000
 Aneroid pressure
 hPa : 700
 Del. quantity
 cm³/1000 strokes : 206.0
 Tolerance
 cm³/1000 strokes : +- 1.0

Check tolerance
 cm³/1000S. : +- 4.0
 Spreed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 120.0
 tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 11.50
 Rated speed rpm : 1045
 Tolerance 1/min : +- 5
 Check
 speed 1/min : +- 10

rack travel mm : 4.00
 Rated speed rpm : 1145
 Tolerance 1/min : +- 15
 Check
 speed 1/min : +- 20

rack travel mm : 0.50
 Tolerance mm : +- 0.50
 Rated speed rpm : 1250

LOW IDLE

control lever
 position degree : 67.0
 tolerance degree : +- 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
 CRT mm min. : > 7.70

Testing:

Rated speed rpm : 300
 rack travel mm : 6.20
 Tolerance mm : +- 0.20

rack travel mm : 2.00

Rated speed rpm : 370

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 700
rack travel mm : 12.55
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.80
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 230
rack travel mm : 10.85
Tolerance mm : \pm 0.15

Pressure hPa : 280
rack travel mm : 11.85
Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 700
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 218.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 132.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 200.0
Tolerance
cm³/1000 strokes : \pm 15.0
Check tolerance
cm³/1000S. : \pm 19.0

LOW IDLE

Rated speed rpm : 300
Rack travel in mm : 6.20
Tolerance mm : \pm 0.20
Del. quantity
cm³/1000 strokes : 20.0
Tolerance
cm³/1000 strokes : \pm 3.0
Check tolerance
cm³/1000S. : \pm 6.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.07.97
Test oil : ISO 4113
Combination No. : 0 402 076 802B
Injection pump
Pump designation : PES6P120A1320/5RS337
: 3
EP type number : 0 412 026 794
Governor
Governor design. : RSV350...1050P8A643
Governor no. : 0 421 833 555
Cust. part No. : 1385930 - Version B

Customer-spec. information
Customer : SCANIA
Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2
Vibration
damper
(RoBo diaphragm) : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 2.5
Tolerance bar : ± 0.1
Test nozzle holde
assembly : 1 688 901 104
Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

K25

Test lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.25
Tolerance mm : +- 0.05

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 7.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.0

Spreed

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 5.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 225.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 7.0

Spreed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 49.0
tolerance degree : +- 4.0

control lever
position degree : 99.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 14.20
Rated speed rpm : 945

Tolerance 1/min : +- 5
Check

speed 1/min : +- 10

rack travel mm : 4.00
Rated speed rpm : 1045

Tolerance 1/min : +- 15
Check

speed 1/min : +- 20

rack travel mm : 0.85
Tolerance mm : +- 0.55

Rated speed rpm : 1200

rack travel mm : 4.00
Rated speed rpm : 1065

Tolerance 1/min : +- 15
Check

speed 1/min : +- 20

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

control lever
position degree : 23.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.25
Tolerance mm : ± 0.05

Rated speed rpm : 900
rack travel mm : 15.25
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.25
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 13.10
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 450
rack travel mm : 13.60
Tolerance mm : ± 0.20

Pressure hPa : 660
rack travel mm : 14.65
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 216.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000s. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 183.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000s. : ± 5.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0
Spread
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000s. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.07.97
Test oil : ISO 4113

Combination No. : 0 402 076 802c

Injection pump
Pump designation : PES6P120A1320/5RS337
: 3
EP type number : 0 412 026 794

Governer
Governer design. : RSV350...1050P8A643
Governer no. : 0 421 833 555

Cust. part No. : 1385930 - Version C

Customer-spec. information

Customer : SCANIA
Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper
(RoBo diaphragm) : 3.1

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 104

Opening pressure bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check tolerance *NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30
Check tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.35
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 5.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 226.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : + 4.0

control lever
position degree : 104.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 14.30
Rated speed rpm : 1095

Tolerance 1/min : + 5

Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1195

Tolerance 1/min : + 15

Check
speed 1/min : + 20

rack travel mm : 0.85
Tolerance mm : + 0.55

Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1225

Tolerance 1/min : + 15

Check
speed 1/min : + 20

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

control lever
position degree : 23.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.35
Tolerance mm : ± 0.05

Rated speed rpm : 1050
rack travel mm : 15.35
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.35
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa :
rack travel mm : 13.10
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 450
rack travel mm : 13.60
Tolerance mm : ± 0.20

Pressure hPa : 660
rack travel mm : 14.65
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 209.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 183.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 5.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 08.07.97
Test oil : ISO 4113

Combination No. : 0 402 076 802D

Injection pump
Pump designation : PES6P120A1320/5RS337
: 3
EP type number : 0 412 026 794

Governor
Governor design. : RSV350...1050P8A643
Governor no. : 0 421 833 555

Cust. part No. : 1385930 - Version D

Customer-spec. information

Customer : SCANIA
Motor : DSI1171A,-C1156A

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Vibration damper
(RoBo diaphragm) : 3.1

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 104

Opening pressure bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.30
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 15.15
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 221.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 5.10
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : + 0.20

governor spring
pre-tension
click setting x : 6.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 221.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 7.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 54.0
tolerance degree : + 4.0

control lever
position degree : 104.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 13.10
Rated speed rpm : 1095

Tolerance 1/min : + 5
Check
speed 1/min : + 10

rack travel mm : 4.00
Rated speed rpm : 1185

Tolerance 1/min : + 15
Check
speed 1/min : + 20

rack travel mm : 0.85
Tolerance mm : + 0.55

Rated speed rpm : 1350

rack travel mm : 4.00
Rated speed rpm : 1205

Tolerance 1/min : + 15
Check
speed 1/min : + 20

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

control lever
position degree : 23.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 350
rack travel mm : 4.60
Tolerance mm : ± 0.10

Testing:

Rated speed rpm : 350
rack travel mm : 5.10
Tolerance mm : ± 0.10

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 15.15
Tolerance mm : ± 0.05

Rated speed rpm : 1050
rack travel mm : 14.15
Tolerance mm : ± 0.05

Rated speed rpm : 925
rack travel mm : 14.60
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.15
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.10
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 510
rack travel mm : 13.10
Tolerance mm : ± 0.20

Pressure hPa : 780
rack travel mm : 14.50
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 189.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.10
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 18.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 26.10.95
Test oil : ISO 4113

Combination No. : 0 402 610 802

Injection pump
Pump designation : PE12P120A500LS7866
EP type number : 0 412 620 836

Governor
Governor design. :
Governor no. :

Cust. part No. : 0240742902

Customer-spec. information

Customer : MTU
Motor : 12V183-02

TEST BENCH REQUIREMENTS

Inlet line : 3.1,3.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

L06

Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 12- 1- 5- 9- 8
: - 3- 4- 11- 10
: - 2- 6- 7

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75

Start of delivery mark

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 10.45
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 184.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.1

Speed

Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 184.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

TORQUE CONTROL

Rated speed rpm : 750

rack travel mm : 10.45

Tolerance mm : +- 0.05

LOW IDLE

Del. quantity
cm³/1000 strokes : 18.0

Tolerance
cm³/1000 strokes : +- 3.0

Check tolerance
cm³/1000S. : +- 6.1

Speed

Tolerance
cm³/1000 strokes : 10.0

Check tolerance
cm³/1000S. : 14.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.07.97
Test oil : ISO 4113

Combination No. : 0 402 618 806

Injection pump
Pump designation : PE8P120A500/5RS7377
EP type number : 0 412 628 904

Governor
Governor design. :
Governor no. :

Cust. part No. : 1 2277 429

Customer-spec. information
Customer : MWM
Motor : TBD 616-V16
Power KW : 864.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1- 2- 7- 8- 3- 4-
: 5- 6

Phasing : 0-30-45-75-90-120
: -315-345
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 285.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 285.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

TORQUE CONTROL

Rated speed rpm : 750

rack travel mm : 12.35

Tolerance mm : ± 0.05

LOW IDLE

Rated speed rpm : 325

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.07.97
Test oil : ISO 4113

Combination No. : 0 402 618 807

Injection pump
Pump designation : PE8P120A500/5RS7378
EP type number : 0 412 628 905

Governor
Governor design. :
Governor no. :

Cust. part No. : 1 2277 428

Customer-spec. information

Customer : MWM
Motor : TBD 616-V16
Power KW : 864.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 13.00
Tolerance mm : ± 0.50

Firing order : 1- 2- 5- 6- 3- 4
 : - 7- 8

Phasing : 0-30-45-75-270-300
 : -315-345
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 750

Rack travel in mm : 12.35
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 285.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 325

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 750

Aneroid pressure
hPa : -

Del. quantity
cm³/1000 strokes : 285.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 9.0

TORQUE CONTROL

Rated speed rpm : 750

rack travel mm : 12.35

Tolerance mm : ± 0.05

LOW IDLE

Rated speed rpm : 325

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : ± 6.0

Spread

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.04.97
Test oil : ISO 4113

Combination No. : 0 402 640 830

Injection pump
Pump designation : PE12P120A520LS7824
: -2
EP type number : 0 412 620 828

Governor
Governor design. : RQV300...1150PA902
: -4
Governor no. : 0 421 813 870

Cust. part No. : 3-7153

Customer-spec. information
Customer : MAN
Motor : D2842LYE
Power KW : 735.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5

Overflow quantity
min. l/h : 120
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 019

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

L12

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 12-1A- 5- 9A- 8
: - 3A- 4-11A- 10
: - 2A- 6

Phasing : 0-45-60-105-120
: -165-180-225-240
: -285-300-345

Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.75
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 305.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 7.30
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 56.0

Tolerance
cm³/1000 strokes : ± 4.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1150
guide sleeve
travel mm : 9.60
Tolerance mm : ± 0.10

Rated speed rpm : 300
guide sleeve
travel mm : 1.40
Tolerance mm : ± 0.20

Rated speed rpm : 750
guide sleeve
travel mm : 5.80
Tolerance mm : ± 0.20

Rated speed rpm : 450
guide sleeve
travel mm : 3.20
Tolerance mm : ± 0.30

Rated speed rpm : 1400

guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1260

Rack travel in mm : 12.70
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1300

Del. quantity
cm³/1000 strokes : 305.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 122.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 12.70
Rated speed rpm : 1195
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1305
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 85.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
CRT mm min. : > 8.90

Testing:

Rated speed rpm : 300
rack travel mm : 7.30
Tolerance mm : ± 0.10

rack travel mm : 2.00
Rated speed rpm : 480
Tolerance 1/min : ± 30

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 13.75
Tolerance mm : ± 0.05

Rated speed rpm : 500
rack travel mm : 6.90
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 8.50
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1300
rack travel mm : 13.75
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.20
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 470
rack travel mm : 12.10
Tolerance mm : ± 0.20

Pressure hPa : 100
rack travel mm : 9.45
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Delivery for shutoff assemblies
(refer to cam sequence).
Arbitrary delivery for standard plunger
barrel assemblies.

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 0.1

Delivery for shutoff assemblies
(refer to cam sequence).
Arbitrary delivery for standard plunger
barrel assemblies.

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 150.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 19.30
Tolerance mm : ± 1.70
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : ± 10.0

LOW IDLE

Delivery for standard plunger/barrel
assemblies.
Zero delivery for shutoff assemblies
(refer to cam sequence).

Rated speed rpm : 300
Rack travel in mm : 7.30
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 56.0
Tolerance
cm³/1000 strokes : ± 4.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.97
Test oil : ISO 4113

Combination No. : 0 402 648 603A

Injection pump
Pump designation : PE8P120A720LS7427T
EP type number : 0 412 628 919

Governor
Governor design. : RQ750PA1227-1
Governor no. : 0 421 801 812

Cust. part No. : 1391886 - Version A

Customer-spec. information
Customer : SCANIA
Motor : DSI(C)14...A,M

TEST BENCH REQUIREMENTS

Inlet Line : 4.1

Vibration damper
(RoBo diaphragm) : 3.2

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 104

Opening pressure bar : 251.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.45
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1-2A- 7- 3A- 4
: - 5A- 6

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.30
Check tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check tolerance °NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 850

Rack travel in mm : 15.05
Tolerance mm : ± 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes :	271.0
<hr/>	
Tolerance	
cm ³ /1000 strokes :	+ 1.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	+ 8.0
<hr/>	
Spreed	
<hr/>	
Tolerance	
cm ³ /1000 strokes :	8.0
<hr/>	
Check tolerance	
cm ³ /1000S. :	12.0
<hr/>	

Rack travel in mm :	6.50
Tolerance mm :	+ 0.10
Del. quantity	
cm ³ /1000 strokes :	38.0
Tolerance	
cm ³ /1000 strokes :	+ 4.0
Check tolerance	
cm ³ /1000S. :	+ 6.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	5.0
Check tolerance	
cm ³ /1000S. :	9.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm :	759
guide sleeve	
travel mm :	4.89
Tolerance mm :	+ 0.15
Rated speed rpm :	480
Tolerance mm :	+ 0.25
Rated speed rpm :	840
Tolerance mm :	+ 0.25
Rated speed rpm :	797
guide sleeve	
travel mm :	10.00
Tolerance mm :	+ 0.25
Rated speed rpm :	850

guide sleeve	
travel mm :	11.50
Tolerance mm :	+ 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm :	850
Aneroid pressure	
hPa :	1500
Del. quantity	
cm ³ /1000 strokes :	271.0
Tolerance	
cm ³ /1000 strokes :	+ 1.0
Check tolerance	
cm ³ /1000S. :	+ 8.0
Spreed	
Tolerance	
cm ³ /1000 strokes :	8.0
Check tolerance	
cm ³ /1000S. :	12.0

CONTROL LEVER

control lever	
position degree :	30.0
tolerance degree :	+ 4.0
control lever	
position degree :	92.0
tolerance degree :	+ 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm :	900
rack travel mm :	15.50
Rated speed rpm :	940
Tolerance 1/min :	+ 4
rack travel mm :	4.00
rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1000
Rated speed rpm :	901
rack travel mm :	15.50
Rated speed rpm :	941
Tolerance 1/min :	+ 4
rack travel mm :	4.00
rack travel mm :	0.50
Tolerance mm :	+ 0.50
Rated speed rpm :	1000

Rated speed rpm : 902
rack travel mm : 15.50

Rated speed rpm : 942
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1000

Rated speed rpm : 903
rack travel mm : 15.50

Rated speed rpm : 943
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1000

Rated speed rpm : 904
rack travel mm : 15.50

Rated speed rpm : 944
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1000

Rated speed rpm : 905
rack travel mm : 15.50

Rated speed rpm : 945
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1000

TORQUE CONTROL

Rated speed rpm : 850
rack travel mm : 15.05
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 15.05
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 12.50
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 350
rack travel mm : 13.20
Tolerance mm : + 0.20

Pressure hPa : 590
rack travel mm : 14.55
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 221.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 7.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.50
Tolerance mm : + 0.20
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : + 20.0
Check tolerance
cm³/1000S. : + 24.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.97
Test oil : ISO 4113

Combination No. : 0 402 648 785

Injection pump
Pump designation : PE8P120A320LS7844
EP type number : 0 412 628 860

Governor
Governor design. : RQV350...1050PA1318
Governor no. : 0 421 814 185

Cust. part No. : 0270746302

Customer-spec. information
Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 047

Inlet press. bar : 2.0
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 130
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

L20

Test lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
 : - 5- 4- 1

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 15.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 272.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000s. : ± 6.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000s. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1106
guide sleeve
travel mm : 8.02
Tolerance mm : ± 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 1.48
Tolerance mm : ± 0.20

Rated speed rpm : 900
guide sleeve
travel mm : 5.69
Tolerance mm : ± 0.25

Rated speed rpm : 580

guide sleeve
travel mm : 3.62
Tolerance mm : ± 0.25

Rated speed rpm : 1204
guide sleeve
travel mm : 10.00
Tolerance mm : ± 0.25

Rated speed rpm : 1300
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1174

Rack travel in mm : 11.00
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
Aneroid pressure
hPa : 1800

Del. quantity
cm³/1000 strokes : 272.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000s. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000s. : 9.0

CONTROL LEVER

control lever
position degree : 120.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 14.30
Rated speed rpm : 1095
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 64.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT mm min. : > 7.00

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : ± 0.10

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 15.30
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 15.30
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : -

MEASUREMENT

Pressure hPa : 700
rack travel mm : 4.60
Tolerance mm : ± 0.20

Pressure hPa : 180
rack travel mm : 0.20
Tolerance mm : ± 0.05

Start interlock

L22

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 274.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 130.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

REDUCED QUANTITY

Aneroid pressure
hPa : 1800
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 206.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : \pm 0.10

Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : \pm 3.0

Check tolerance
cm³/1000S. : \pm 6.0

Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.97
Test oil : ISO 4113

Combination No. : 0 402 648 920

Injection pump
Pump designation : PE8P120A320LS7844
EP type number : 0 412 628 260

Governor
Governor design. : RQV350...1050PA870
: -16
Governor no. : 0 421 813 953

Cust. part No. :

Customer-spec. information

Customer : MB-NFZ
Motor : OM442 LA
Power KW : 370.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 1 417 413 025

Inlet press. bar : 1.5
Tolerance bar : ± 0.1

Overflow quantity min. l/h : 110
Tolerance l/h : ± 10.0

Test nozzle holder assembly : 1 688 901 105

Opening pressure bar : 208.5
Tolerance bar : ± 1.5

L24

Test lines : 1 680 750 075

Outside diameter : 8.0

x inside diameter : 2.5
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 5.05
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 8- 7- 2- 6- 3
: - 5- 4- 1

Phasing : 0-45-90-135-180
: -225-270-315
Tolerance : ± 0.50
Check tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 8

CRT ZERO POSITION

Rack travel in mm : 14.30
Tolerance mm : ± 0.10

BASIC SETTING

Rated speed rpm : 600

Rack travel in mm : 14.30
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 258.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : + 0.10

Del. quantity
cm³/1000 strokes : 19.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Speed

Tolerance
cm³/1000 strokes : 6.0

Check tolerance
cm³/1000S. : 10.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1108
guide sleeve
travel mm : 8.05
Tolerance mm : + 0.25

Rated speed rpm : 350
guide sleeve
travel mm : 1.55
Tolerance mm : + 0.25

Rated speed rpm : 570
guide sleeve
travel mm : 3.55

Tolerance mm : + 0.25

Rated speed rpm : 900
guide sleeve
travel mm : 5.65
Tolerance mm : + 0.25

Rated speed rpm : 1204
guide sleeve
travel mm : 10.05
Tolerance mm : + 0.25

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1125

Rack travel in mm : 17.25
Tolerance mm : + 0.75

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 600
Aneroid pressure
hPa : 1100
Del. quantity
cm³/1000 strokes : 258.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 119.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 14.30
Rated speed rpm : 1095
Tolerance 1/min : + 5

rack travel mm : 4.00
Rated speed rpm : 1195
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50

Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 67.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250
CRT mm min. : > 6.60

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : ± 0.10

Rated speed rpm : 450

TORQUE CONTROL

Rated speed rpm : 600
rack travel mm : 14.30
Tolerance mm : ± 0.10

Rated speed rpm : 1050
rack travel mm : 15.30
Tolerance mm : ± 0.10

Rated speed rpm : 800
rack travel mm : 15.30
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

2-stage LDA setting

Rated speed rpm : 600
Pressure hPa : 1100

MEASUREMENT

Pressure hPa : 290
rack travel mm : -5.50
Tolerance mm : ± 0.05

Pressure hPa : 780
rack travel mm : -1.30
Tolerance mm : ± 0.10

Pressure hPa : 1300
rack travel mm : 0.45
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 270

Check
speed 1/min : > 80
Check
speed 1/min : < 290

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1800
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 272.0
Tolerance
cm³/1000 strokes : ± 1.5
Check tolerance
cm³/1000S. : ± 4.5

Aneroid pressure
hPa : 1800
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 274.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 140.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

REDUCED QUANTITY

Aneroid pressure
hPa : 1800
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 206.0

Tolerance
cm³/1000 strokes : +- 1.5
Check tolerance
cm³/1000S. : +- 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 270.0
Tolerance
cm³/1000 strokes : +- 10.0
Check tolerance
cm³/1000S. : +- 14.0

LOW IDLE

Rated speed rpm : 350
Rack travel in mm : 5.00
Tolerance mm : +- 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.04.97
Test oil : ISO 4113
Combination No. : 0 402 649 816
Injection pump
Pump designation : PE10P120A520LS7853
EP type number : 0 412 629 810
Governor
Governor design. : RQV300...1150PA1039
 : -2K
Governor no. : 0 421 815 316
Cust. part No. : 3-7225

Customer-spec. information
Customer : MAN
Motor : D 2840 LE401
Power KW : 603.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 025
Inlet press. bar : 1.5
Test nozzle holde
assembly : 1 688 901 019
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5
Test lines : 1 680 750 075
Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 4.55
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 10-9A- 4- 1A- 8
 : - 7A- 6- 3A- 5
Phasing : 0-45-72-117-144
 : -189-216-261-288
 : -333
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75
Start of delivery mark
Tolerance : ± 0.10
Check
tolerance *NW : ± 0.75
Barrel no. : 10

BASIC SETTING

Rated speed rpm : 1150
Rack travel in mm : 13.35
Tolerance mm : ± 0.05
Del. quantity
cm³/1000 strokes : 295.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 9.0

Rated speed rpm : 300

Rack travel in mm : 6.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : ± 5.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1214
guide sleeve
travel mm : 10.52
Tolerance mm : ± 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 2.24
Tolerance mm : ± 0.25

Rated speed rpm : 799
guide sleeve
travel mm : 6.90
Tolerance mm : ± 0.25

Rated speed rpm : 329
guide sleeve
travel mm : 2.75
Tolerance mm : ± 0.25

Rated speed rpm : 379
guide sleeve
travel mm : 3.53
Tolerance mm : ± 0.25

Rated speed rpm : 450

guide sleeve
travel mm : 4.21
Tolerance mm : ± 0.25

Rated speed rpm : 1450
guide sleeve
travel mm : 13.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1280

Rack travel in mm : 12.50
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
Aneroid pressure
hPa : 1300
Del. quantity
cm³/1000 strokes : 295.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 121.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 12.30
Rated speed rpm : 1203
Tolerance 1/min : ± 8

rack travel mm : 4.00
Rated speed rpm : 1325
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 76.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 8.20

Testing:

Rated speed rpm : 300
rack travel mm : 6.80
Tolerance mm : ± 0.10

Rated speed rpm : 345

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 13.35
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 12.00
Tolerance mm : ± 0.10

Rated speed rpm : 900
rack travel mm : 13.00
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 6.90
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 8.60
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 1300
rack travel mm : 13.35
Tolerance mm : ± 0.05

Rated speed rpm : 1150
Pressure hPa : -
rack travel mm : 9.60

MO2

Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 850
rack travel mm : 12.15
Tolerance mm : ± 0.15

Pressure hPa : 400
rack travel mm : 9.95
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 240

Check
speed 1/min : > 80
Check
speed 1/min : < 260

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1300
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 250.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : 1300
Rated speed rpm : 900
Del. quantity
cm³/1000 strokes : 280.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Delivery for shutoff assemblies
(refer to cam sequence).
Arbitrary delivery for standard plunger
barrel assemblies.

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 0.1
Tolerance
cm³/1000 strokes : ± 0.1

Delivery for shutoff assemblies
(refer to cam sequence).
Arbitrary delivery for standard plunger
barrel assemblies.

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 10.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 170.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 19.70
Del. quantity
cm³/1000 strokes : 110.0
Tolerance
cm³/1000 strokes : ± 10.0

LOW IDLE

Delivery for standard plunger/barrel
assemblies.
Zero delivery for shutoff assemblies
(refer to cam sequence).

Rated speed rpm : 300
Rack travel in mm : 6.80
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 45.0
Tolerance
cm³/1000 strokes : ± 5.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.97
Test oil : ISO 4113
Combination No. : 0 402 676 832
Injection pump
Pump designation : PE6P120A320LS7898
EP type number : 0 412 626 957
Governor
Governor design. : RSV350...1G00POA648
Governor no. : 0 421 833 565

Cust. part No. : 0270748202

Customer-spec. information

Customer : MB-NFZ
Motor : OM441 A
Power kW : 170.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 047
Inlet press. bar : 1.5
Tolerance bar : ± 0.1
Overflow quantity
min. l/h : 120
Tolerance l/h : ± 10.0
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 075
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 1000

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 5.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 20.50
Tolerance mm : ± 0.50
Firing order : 6- 3- 5- 2- 4-
: 1
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance *NW : ± 0.75
Start of delivery mark
Tolerance : ± 0.10
Check
tolerance *NW : ± 0.75
Barrel no. : 6

BASIC SETTING

Rated speed rpm : 980

Rack travel in mm : 11.90
Tolerance mm : +- 0.05

Del. quantity
cm3/1000 strokes : 175.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Speed

Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

Rated speed rpm : 350

Rack travel in mm : 5.00
Tolerance mm : +- 0.10

Del. quantity
cm3/1000 strokes : 19.0

Tolerance
cm3/1000 strokes : +- 3.0

Check tolerance
cm3/1000S. : +- 6.0

Speed
Tolerance
cm3/1000 strokes : 6.0

Check tolerance
cm3/1000S. : 10.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE POSITION

control lever
position degree : - 3
Rated speed rpm : 800

Rack travel in mm : 0.50
Tolerance mm : +- 0.20

governor spring
pre-tension
click setting x : 4.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 980
Aneroid pressure
hPa : 1000

Del. quantity
cm3/1000 strokes : 175.0

Tolerance
cm3/1000 strokes : +- 1.0

Check tolerance
cm3/1000S. : +- 4.0

Speed
Tolerance
cm3/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 9.0

CONTROL LEVER

control lever
position degree : 93.0
tolerance degree : +- 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm : 1030
rack travel mm : 10.90

Rated speed rpm : 1080
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1300

Rated speed rpm : 1031
rack travel mm : 10.90

Rated speed rpm : 1081
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : +- 0.55
Rated speed rpm : 1300

Rated speed rpm : 1032
rack travel mm : 10.90

Rated speed rpm : 1082
Tolerance 1/min : +- 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

Rated speed rpm : 1033
rack travel mm : 10.90

Rated speed rpm : 1083
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

Rated speed rpm : 1034
rack travel mm : 10.90

Rated speed rpm : 1084
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

Rated speed rpm : 1035
rack travel mm : 10.90

Rated speed rpm : 1085
Tolerance 1/min : ± 4
rack travel mm : 4.00

rack travel mm : 0.85
Tolerance mm : ± 0.55
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100

CRT mm min. : > 19.50

Testing:

Rated speed rpm : 350
rack travel mm : 5.00
Tolerance mm : ± 0.10

M06

rack travel mm : 2.00
Rated speed rpm : 405
Tolerance 1/min : ± 30

SET IDLE AUXILIARY SPRING

rack travel mm : 2.00

TORQUE CONTROL

Rated speed rpm : 980
rack travel mm : 11.90
Tolerance mm : ± 0.05

Rated speed rpm : 600
rack travel mm : 11.90
Tolerance mm : ± 0.05

Rated speed rpm : 400
rack travel mm : 11.20
Tolerance mm : ± 0.15

ANEROID/ALTITUDE COMPENSATOR TEST

SETTING

Rated speed rpm : 400
Pressure hPa : 1000
rack travel mm : 11.90
Tolerance mm : ± 0.05

Rated speed rpm : 400
Pressure hPa : -
rack travel mm : 10.40
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 400
Pressure hPa : 300
Tolerance mm : ± 0.15

Pressure hPa : 350
rack travel mm : 11.20
Tolerance mm : ± 0.15

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1000
Rated speed rpm : 600

Del. quantity
cm³/1000 strokes : 173.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

Aneroid pressure
hPa : 350
Rated speed rpm : 400
Del. quantity
cm³/1000 strokes : 131.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 136.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 180.0
Tolerance
cm³/1000 strokes : ± 10.0
Check tolerance
cm³/1000S. : ± 14.0

LOW IDLE

Rated speed rpm : 350

M07

Rack travel in mm : 5.00
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 19.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0
Spreed
Tolerance
cm³/1000 strokes : 6.0
Check tolerance
cm³/1000S. : 10.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.06.97
Test oil : ISO 4113

Combination No. : 0 402 746 647

Injection pump
Pump designation : PES6P120A720RS7366
EP type number : 0 412 726 933

Governor
Governor design. : RQV275...1100PA1208K
Governor no. : 0 421 815 459

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.41.4000

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 12.45
Tolerance mm : ± 0.05

Del. quantity
cm3/1000 strokes : 276.0

Tolerance
cm3/1000 strokes : ± 1.0

Check tolerance
cm3/1000S. : ± 4.0

Speed

Tolerance
 cm³/1000 strokes : 5.0

 Check tolerance
 cm³/1000S. : 9.0

 Rated speed rpm : 275
 Rack travel in mm : 6.70
 Tolerance mm : ± 0.10
 Del. quantity
 cm³/1000 strokes : 23.0
 Tolerance
 cm³/1000 strokes : ± 3.0
 Check tolerance
 cm³/1000S. : ± 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1155
 guide sleeve
 travel mm : 9.75
 Tolerance mm : ± 0.15
 Rated speed rpm : 275
 guide sleeve
 travel mm : 1.70
 Tolerance mm : ± 0.20
 Rated speed rpm : 790
 guide sleeve
 travel mm : 6.42
 Tolerance mm : ± 0.25
 Rated speed rpm : 460
 guide sleeve
 travel mm : 3.77
 Tolerance mm : ± 0.25
 Rated speed rpm : 1440
 guide sleeve
 travel mm : 13.50
 Tolerance mm : ± 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100

MO9

Aneroid pressure
 hPa : 1200
 Del. quantity
 cm³/1000 strokes : 276.0
 Tolerance
 cm³/1000 strokes : ± 1.0
 Check tolerance
 cm³/1000S. : ± 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000S. : 9.0

CONTROL LEVER

control lever
 position degree : 117.0
 tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.40
 Rated speed rpm : 1145
 Tolerance 1/min : ± 5
 Check
 speed 1/min : ± 10

rack travel mm : 4.00
 Rated speed rpm : 1260
 Tolerance 1/min : ± 15
 Check
 speed 1/min : ± 20

rack travel mm : 0.50
 Tolerance mm : ± 0.50
 Rated speed rpm : 1350

LOW IDLE

control lever
 position degree : 76.0
 tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 100
 CRT mm min. : > 8.20

Testing:

Rated speed rpm : 275
 rack travel mm : 6.70
 Tolerance mm : ± 0.10

Rated speed rpm : 335

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 12.45
Tolerance mm : ± 0.05

Rated speed rpm : 650
rack travel mm : 13.30
Tolerance mm : ± 0.10

Rated speed rpm : 800
rack travel mm : 13.30
Tolerance mm : ± 0.20

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 800
Pressure hPa : 1200
rack travel mm : 13.30
Tolerance mm : ± 0.10

Rated speed rpm : 800
Pressure hPa : -
rack travel mm : 9.40
Tolerance mm : ± 0.10

MEASUREMENT

Rated speed rpm : 800
Pressure hPa : 290
rack travel mm : 10.60
Tolerance mm : ± 0.20

Pressure hPa : 520
rack travel mm : 12.50
Tolerance mm : ± 0.05

Start interlock

Rated speed rpm : > 170
Rated speed rpm : < 220

Check speed 1/min : > 150
Check speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1200
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 283.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : 1200
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 293.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 152.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 12.00
Tolerance mm : ± 0.30
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Rated speed rpm : 275
Rack travel in mm : 6.70
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 3.0

Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.01.97
Test oil : ISO 4113

Combination No. : 0 402 796 814

Injection pump
Pump designation : PES6P120A72ORS7367
EP type number : 0 412 726 932

Governor
Governor design. : RE30
Governor no. : 0 421 890 026

Cust. part No. :

Customer-spec. information
Customer : IVECO-FRANCE
Motor : 8460.41.6000

TEST BENCH REQUIREMENTS

Inlet line : 4.2

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 076

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 2.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 20.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery blocking

Check
tolerance °NW : ± 0.40

Barrel no. : 1

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min-1: 0

Setting point
(P, R and H pump)

Uact V : 3.100
 CRT mm : 13.00
 Tolerance mm : +/- 0.05
 Check tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
 CRT mm : 6.15
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
 CRT mm : 12.50
 Tolerance mm : +/- 0.05
 Check tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
 CRT mm : 5.50
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with
 deenergised adjusting magnet
 and control rod in
 stop position.

CRT mm : 0.75
 Tolerance mm : +/- 0.25
 Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
 H and M pumps)

Test with control rod
 in stop position

Engine speed min-1: 60
 Amplitude V : 1.4
 Tolerance V : +/- 0.6
 Check tolerance V : +/- 1.20

Engine speed min-1: 600
 Difference
 Amplitude to
 Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 1050
 Uact V : 2.900
 Del. quantity
 cm³/1000 strokes : 296.0
 Tolerance
 cm³/1000 strokes : +/- 1.0
 Check tolerance
 cm³/1000s. : +/- 4.0
 Speed
 Tolerance
 cm³/1000 strokes : 5.0
 Check tolerance
 cm³/1000s. : 9.0
 FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 500
 Uact V : 2.690
 Del. quantity
 cm³/1000 strokes : 238.0
 Tolerance
 cm³/1000 strokes : +/- 3.0
 Check tolerance
 cm³/1000s. : +/- 6.0

TEST POINT L1

Rated speed rpm : 275
 Uact V : 1.600
 Tolerance Volt : +/- 0.060
 Check tolerance
 Volt : +/- 0.080
 Del. quantity
 cm³/1000 strokes : 24.0
 Tolerance
 cm³/1000 strokes : +/- 3.0
 Speed
 Tolerance
 cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.04.97
Test oil : ISO 4113
Combination No. : 0 402 840 301
Injection pump
Pump designation : PE12P120A520LS8507
EP type number : 0 412 820 201
Governor
Governor design. : RQV300...1150PA1039
 : -3K
Governor no. : 0 421 815 980
Cust. part No. : 51.11103-7329

Customer-spec. information
Customer : MAN
Motor : D 2842 LE 406
Power KW : 882.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 1 417 413 078
Inlet press. bar : 3.0
Tolerance bar : ± 0.1
Overflow quantity
min. l/h : 180
Tolerance l/h : ± 15.0
Test nozzle holde
assembly : 1 688 901 105
Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

M15

Test lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 6.45
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 13.00
Tolerance mm : ± 0.50
Firing order : 12-1A- 5- 9A- 8
 : - 3A- 4-11A- 10
 : - 2A- 6
Phasing : 0-45-60-105-120
 : -165-180-225-240
 : -285-300-345
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75
Start of delivery mark
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75
Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 13.50
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 331.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Spread

Tolerance
 cm³/1000 strokes : 8.0

Check tolerance
 cm³/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 5.20
 Tolerance mm : + 0.10
 Del. quantity
 cm³/1000 strokes : 49.0
 Tolerance
 cm³/1000 strokes : + 3.0
 Check tolerance
 cm³/1000S. : + 6.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1206
 guide sleeve
 travel mm : 9.84
 Tolerance mm : + 0.25

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.68
 Tolerance mm : + 0.25

Rated speed rpm : 797
 guide sleeve
 travel mm : 6.36
 Tolerance mm : + 0.25

Rated speed rpm : 460
 guide sleeve
 travel mm : 3.78
 Tolerance mm : + 0.25

Rated speed rpm : 1500
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

Rated speed rpm : 1330

Rack travel in mm : 11.80
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1150
 Aneroid pressure
 hPa : 2000
 Del. quantity
 cm³/1000 strokes : 331.0
 Tolerance
 cm³/1000 strokes : + 1.0
 Check tolerance
 cm³/1000S. : + 4.0
 Spread
 Tolerance
 cm³/1000 strokes : 8.0
 Check tolerance
 cm³/1000S. : 12.0

CONTROL LEVER

control lever
 position degree : 118.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 12.50
 Rated speed rpm : 1195
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1325
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1400

LOW IDLE

control lever
position degree : 71.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 7.40

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : ± 0.10

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 13.50
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 13.50
Tolerance mm : ± 0.10

Rated speed rpm : 850
rack travel mm : 12.60
Tolerance mm : ± 0.10

Rated speed rpm : 650
rack travel mm : 11.25
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 6.30
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 7.40
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 2000
rack travel mm : 13.50
Tolerance mm : ± 0.05

Rated speed rpm : 1000
Pressure hPa : -
rack travel mm : 7.60
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 1000
Pressure hPa : 220
rack travel mm : 7.95
Tolerance mm : ± 0.05

Pressure hPa : 1050
rack travel mm : 11.75
Tolerance mm : ± 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 335.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 315.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 288.0

Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0

Delivery for shutoff assemblies
(refer to cam sequence).
Arbitrary delivery for standard plunger
barrel assemblies.

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 0.1
Tolerance
cm³/1000 strokes : + 0.1
Check tolerance
cm³/1000S. : + 0.1

Delivery for shutoff assemblies
(refer to cam sequence).
Arbitrary delivery for standard plunger
barrel assemblies.

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 15.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
Del. quantity
cm³/1000 strokes : 115.0

M18

Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Delivery for standard plunger/barrel
assemblies.
Zero delivery for shutoff assemblies
(refer to cam sequence).

Rated speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 49.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 6.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.04.97
Test oil : ISO 4113

Combination No. : 0 402 840 302

Injection pump
Pump designation : PE12P120A520LS8507
EP type number : 0 412 820 201

Governor
Governor design. : RQV300...1050PA1039
 : -4K
Governor no. : 0 421 815 498

Cust. part No. : 51.11103-7489

Customer-spec. information
Customer : MAN
Motor : D 2842 LE 408
Power KW : 735.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 3.0
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 185
Tolerance l/h : + 15.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089
Outside diameter : 8.0
x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 6.45
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 13.00
Tolerance mm : + 0.50

Firing order : 12-1A- 5- 9A- 8
 : - 3A- 4-11A- 10
 : - 2A- 6

Phasing : 0-45-60-105-120
 : -165-180-225-240
 : -285-300-345
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking
Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 12

BASIC SETTING

Rated speed rpm : 1050

Rack travel in mm : 11.80
 Tolerance mm : + 0.05

Del. quantity
 cm³/1000 strokes : 275.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Speed

Tolerance
 cm³/1000 strokes : 8.0

Check tolerance
 cm³/1000S. : 12.0

Rated speed rpm : 300

Rack travel in mm : 5.20
 Tolerance mm : + 0.10

Del. quantity
 cm³/1000 strokes : 49.0

Tolerance
 cm³/1000 strokes : + 3.0

Check tolerance
 cm³/1000S. : + 8.0

Speed

Tolerance
 cm³/1000 strokes : 8.0

Check tolerance
 cm³/1000S. : 12.0

(B) SETTING OF INJECTION PUMP
 WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1122
 guide sleeve
 travel mm : 10.59
 Tolerance mm : + 0.15

Rated speed rpm : 300
 guide sleeve
 travel mm : 1.61
 Tolerance mm : + 0.20

Rated speed rpm : 768
 guide sleeve
 travel mm : 6.62
 Tolerance mm : + 0.25

Rated speed rpm : 470
 guide sleeve
 travel mm : 3.89
 Tolerance mm : + 0.25

Rated speed rpm : 1320
 guide sleeve
 travel mm : 13.50
 Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
 position degree : - 1
 Rated speed rpm : 1185

Rack travel in mm : 10.80
 Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1050
 Aneroid pressure
 hPa : 1500

Del. quantity
 cm³/1000 strokes : 275.0

Tolerance
 cm³/1000 strokes : + 1.0

Check tolerance
 cm³/1000S. : + 4.0

Speed

Tolerance
 cm³/1000 strokes : 8.0

Check tolerance
 cm³/1000S. : 12.0

CONTROL LEVER

control lever
 position degree : 119.0
 tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.80
 Rated speed rpm : 1115
 Tolerance 1/min : + 5

rack travel mm : 4.00
 Rated speed rpm : 1185
 Tolerance 1/min : + 15

rack travel mm : 0.50
 Tolerance mm : + 0.50
 Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 7.00

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : ± 0.10

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 1050
rack travel mm : 11.80
Tolerance mm : ± 0.05

Rated speed rpm : 800
rack travel mm : 11.15
Tolerance mm : ± 0.10

Rated speed rpm : 650
rack travel mm : 10.35
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 6.30
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 7.40
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1000
Pressure hPa : 1500
rack travel mm : 11.80
Tolerance mm : ± 0.05

Rated speed rpm : 1000

M21

Pressure hPa : -
rack travel mm : 7.75
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 1000

Pressure hPa : 300
rack travel mm : 8.15
Tolerance mm : ± 0.05

Pressure hPa : 900
rack travel mm : 10.85
Tolerance mm : ± 0.15

Start interlock

Rated speed rpm : > 100
Rated speed rpm : < 220

Check
speed 1/min : > 80
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 800
Del. quantity
cm³/1000 strokes : 275.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0

Aneroid pressure
hPa : 1500
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 260.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000s. : ± 6.0

Delivery for shutoff assemblies
(refer to cam sequence).
Arbitrary delivery for standard plunger
barrel assemblies.

Aneroid pressure
hPa : -

Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 0.1
Tolerance
cm³/1000 strokes : ± 0.1
Check tolerance
cm³/1000S. : ± 0.1

Delivery for shutoff assemblies
(refer to cam sequence).
Arbitrary delivery for standard plunger
barrel assemblies.

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 15.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 185.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : ± 0.50
Del. quantity
cm³/1000 strokes : 135.0
Tolerance
cm³/1000 strokes : ± 15.0
Check tolerance
cm³/1000S. : ± 19.0

LOW IDLE

Delivery for standard plunger/barrel

M22

assemblies.
Zero delivery for shutoff assemblies
(refer to cam sequence).

Rated speed rpm : 300
Rack travel in mm : 5.20
Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 49.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 8.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 13.03.97
Test oil : ISO 4113

Combination No. : 0 402 846 063

Injection pump
Pump designation : PE6P120A320RS8024-1
EP type number : 0 412 826 029

Governor
Governor design. : RQV250...1100PA1072
 : -5K
Governor no. : 0 421 815 977

Cust. part No. : 477952-P05 v. 11.95

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : TD74 EU
Power KW : 210.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 089

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.60
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 7.60
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
 : 4

Phasing : 0-60-120-180-240
 : -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 13.60
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 211.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.80
Tolerance mm : +- 0.10

Del. quantity
cm³/1000 strokes : 23.0

Tolerance
cm³/1000 strokes : +- 2.5

Check tolerance
cm³/1000S. : +- 5.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1176
guide sleeve
travel mm : 10.15
Tolerance mm : +- 0.25

Rated speed rpm : 250
guide sleeve
travel mm : 1.33
Tolerance mm : +- 0.25

Rated speed rpm : 733
guide sleeve
travel mm : 5.39
Tolerance mm : +- 0.25

Rated speed rpm : 307
guide sleeve
travel mm : 2.29
Tolerance mm : +- 0.25

Rated speed rpm : 357

guide sleeve
travel mm : 2.97
Tolerance mm : +- 0.25

Rated speed rpm : 390
guide sleeve
travel mm : 3.22
Tolerance mm : +- 0.25

Rated speed rpm : 1390
guide sleeve
travel mm : 13.50
Tolerance mm : +- 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1290

Rack travel in mm : 7.50
Tolerance mm : +- 2.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 211.0

Tolerance
cm³/1000 strokes : +- 1.0

Check tolerance
cm³/1000S. : +- 4.0

Spread
Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 68.0
tolerance degree : +- 4.0

control lever
position degree : 120.0
tolerance degree : +- 4.0

RATED SPEED

rack travel mm : 12.60
Rated speed rpm : 1135
Tolerance 1/min : +- 5

rack travel mm : 4.00
Rated speed rpm : 1230
Tolerance 1/min : + 15

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1320

LOW IDLE

control lever
position degree : 72.0
tolerance degree : + 4.0

control lever
position degree : 20.0
tolerance degree : + 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 6.70

Testing:

Rated speed rpm : 300
rack travel mm : 4.80
Tolerance mm : + 0.10

Rated speed rpm : 375

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 13.60
Tolerance mm : + 0.05

Rated speed rpm : 650
rack travel mm : 13.10
Tolerance mm : + 0.10

Rated speed rpm : 300
rack travel mm : 11.50
Tolerance mm : + 0.30

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 13.60

M25

Tolerance mm : + 0.10

Rated speed rpm : 1100
Pressure hPa : -
rack travel mm : 7.75
Tolerance mm : + 0.10

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 885
rack travel mm : 5.50
Tolerance mm : + 0.20

Pressure hPa : 190
rack travel mm : 0.25
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 243.0
Tolerance
cm³/1000 strokes : + 2.5
Check tolerance
cm³/1000S. : + 5.0
Speed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Aneroid pressure
hPa : -
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 115.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.80

Tolerance mm : ± 0.10
Del. quantity
cm³/1000 strokes : 23.0
Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000S. : ± 5.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 20.09.95
Test oil : ISO 4113

Combination No. : 0 402 846 068

Injection pump
Pump designation : PE6P110A320RS8036
EP type number : 0 412 816 012

Governor
Governor design. : RQV300...1200PA1043
: -2
Governor no. : 0 421 814 155

Cust. part No. : 11030951
: -P02 v.09.95

Customer-spec. information
Customer : VME
Motor : TD73KCE
Power KW : 187.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.50
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 11.80
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 198.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 24.0

Tolerance
cm³/1000 strokes : ± 2.0

Check tolerance
cm³/1000S. : ± 5.0

Spread
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1256
guide sleeve
travel mm : 8.24
Tolerance mm : ± 0.25

Rated speed rpm : 300
guide sleeve
travel mm : 1.19
Tolerance mm : ± 0.25

Rated speed rpm : 857
guide sleeve
travel mm : 5.21
Tolerance mm : ± 0.25

Rated speed rpm : 385
guide sleeve
travel mm : 1.98
Tolerance mm : ± 0.25

Rated speed rpm : 435

guide sleeve
travel mm : 2.45
Tolerance mm : ± 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 3.04
Tolerance mm : ± 0.25

Rated speed rpm : 1550
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1285

Rack travel in mm : 16.50
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 198.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spread
Tolerance
cm³/1000 strokes : 7.0
Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 47.0
tolerance degree : ± 4.0

control lever
position degree : 115.0
tolerance degree : ± 4.0

RATED SPEED
rack travel mm : 10.80
Rated speed rpm : 1245
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1350
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1450

LOW IDLE

control lever
position degree : 80.0
tolerance degree : ± 4.0

control lever
position degree : 14.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : > 6.60

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : ± 0.10

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 11.80
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 11.80
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 7.80
Tolerance mm : ± 0.10

MEASUREMENT

NO1

Rated speed rpm : 500

Pressure hPa : 880
rack travel mm : 3.60
Tolerance mm : ± 0.20

Pressure hPa : 240
rack travel mm : 0.25
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 114.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.50
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : ± 2.0
Check tolerance
cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 14.10.96
Test oil : ISO 4113

Combination No. : 0 402 846 075

Injection pump
Pump designation : PE6P110A320RS8042
EP type number : 0 412 816 013

Governor
Governor design. : RQV300...1050PA1183
: -1
Governor no. : 0 421 814 159

Cust. part No. : 11032711
: -P01 V.08/96

Customer-spec. information
Customer : VCE
Motor : TD 73 KDE
Power KW : 153.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 101

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

N02

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.85
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 10.90
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 178.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 300

Rack travel in mm : 4.50
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 24.0

Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Spreed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1107
guide sleeve
travel mm : 7.86
Tolerance mm : ± 0.15

Rated speed rpm : 300
guide sleeve
travel mm : 1.17
Tolerance mm : ± 0.20

Rated speed rpm : 804
guide sleeve
travel mm : 5.19
Tolerance mm : ± 0.25

Rated speed rpm : 530
guide sleeve
travel mm : 3.11
Tolerance mm : ± 0.25

Rated speed rpm : 1400

N03

guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1259

Rack travel in mm : 9.80
Tolerance mm : ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 178.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 3.0

Spreed

Tolerance
cm³/1000 strokes : 7.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 45.0
tolerance degree : ± 4.0

control lever
position degree : 112.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 9.90
Rated speed rpm : 1095
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1175
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1300

LOW IDLE

control lever
position degree : 82.0
tolerance degree : \pm 4.0

control lever
position degree : 16.0
tolerance degree : \pm 4.0

Setting point w/out bumper spring

Rated speed rpm : 200

CRT mm min. : $>$ 7.50

Testing:

Rated speed rpm : 300
rack travel mm : 4.50
Tolerance mm : \pm 0.30

Rated speed rpm : 340

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 10.90
Tolerance mm : \pm 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 10.90
Tolerance mm : \pm 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.00
Tolerance mm : \pm 0.10

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 710
rack travel mm : 2.60
Tolerance mm : \pm 0.20

Pressure hPa : 270
rack travel mm : 0.25

NO4

Tolerance mm : \pm 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 117.0
Tolerance
cm³/1000 strokes : \pm 1.0
Check tolerance
cm³/1000S. : \pm 4.0

LOW IDLE

Rated speed rpm : 300

Rack travel in mm : 4.50
Tolerance mm : \pm 0.30

Del. quantity
cm³/1000 strokes : 24.0
Tolerance
cm³/1000 strokes : \pm 2.5
Check tolerance
cm³/1000S. : \pm 5.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 16.07.97
Test oil : ISO 4113

Combination No. : 0 402 846 076

Injection pump
Pump designation : PE6P120A32ORS8043
EP type number : 0 412 826 035

Governor
Governor design. : RQV30J...1100PA1248
Governor no. : 0 421 814 165

Cust. part No. : 11031330
: -P02 v.03.97

Customer-spec. information

Customer : VCE
Motor : TD 103 KBE
Power KW : 216.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 150
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

N05

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 1.00

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 700

Rack travel in mm : 12.30
Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 270.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 330

Rack travel in mm : 4.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 29.0

Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Speed

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1140
guide sleeve
travel mm : 7.71
Tolerance mm : ± 0.15

Rated speed rpm : 330
guide sleeve
travel mm : 2.10
Tolerance mm : ± 0.20

Rated speed rpm : 1080
guide sleeve
travel mm : 6.80
Tolerance mm : ± 0.25

Rated speed rpm : 520
guide sleeve
travel mm : 4.67

N06

Tolerance mm : ± 0.25

Rated speed rpm : 1370
guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1240

Rack travel in mm : 11.30
Tolerance mm : ± 1.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 700
Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 270.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Speed

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 60.0
tolerance degree : ± 4.0

control lever
position degree : 115.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 11.30
Rated speed rpm : 1130
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1220
Tolerance 1/min : ± 15

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1275

LOW IDLE

control lever
position degree : 65.0
tolerance degree : ± 4.0

control lever
position degree : 14.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 230

CRT mm min. : > 6.00

Testing:

Rated speed rpm : 330
rack travel mm : 4.00
Tolerance mm : ± 0.10

Rated speed rpm : 400

TORQUE CONTROL

Rated speed rpm : 700
rack travel mm : 12.30
Tolerance mm : ± 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.30
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.70
Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 550
rack travel mm : 2.20
Tolerance mm : ± 0.20

N07

Pressure hPa : 230
rack travel mm : 0.25
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 700
Del. quantity
cm³/1000 strokes : 202.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

LOW IDLE

Rated speed rpm : 330

Rack travel in mm : 4.00
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 29.0
Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 19.12.96
Test oil : ISO 4113

Combination No. : 0 402 846 077

Injection pump
Pump designation : PE6P120A320RS8043
EP type number : 0 412 826 035

Governor
Governor design. : RQV300...1050PA1247
Governor no. : 0 421 814 163

Cust. part No. : 11031331-P02v.11.96

Customer-spec. information
Customer : VCE
Motor : TD 103 KCE
Power kW : 189.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 205
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.25
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 11.00
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

BASIC SETTING

Rated speed rpm : 500

Rack travel in mm : 12.90

Tolerance mm : ± 0.05

Del. quantity
cm³/1000 strokes : 322.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

Rated speed rpm : 320

Rack travel in mm : 4.60
Tolerance mm : ± 0.10

Del. quantity
cm³/1000 strokes : 50.0

Tolerance
cm³/1000 strokes : ± 2.5

Check tolerance
cm³/1000S. : ± 5.0

Spread

Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1102

guide sleeve
travel mm : 7.80
Tolerance mm : ± 0.15

Rated speed rpm : 320

guide sleeve
travel mm : 1.34
Tolerance mm : ± 0.20

Rated speed rpm : 802

guide sleeve
travel mm : 5.18
Tolerance mm : ± 0.25

Rated speed rpm : 530

guide sleeve
travel mm : 3.11
Tolerance mm : ± 0.25

Rated speed rpm : 1400

guide sleeve
travel mm : 11.50
Tolerance mm : ± 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1250

Rack travel in mm : 10.50
Tolerance mm : ± 2.00

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 500

Aneroid pressure
hPa : 1500

Del. quantity
cm³/1000 strokes : 322.0

Tolerance
cm³/1000 strokes : ± 1.0

Check tolerance
cm³/1000S. : ± 4.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 11.0

CONTROL LEVER

control lever
position degree : 45.0
tolerance degree : ± 4.0

control lever
position degree : 110.0
tolerance degree : ± 4.0

RATED SPEED

rack travel mm : 10.80
Rated speed rpm : 1090
Tolerance 1/min : ± 5

rack travel mm : 4.00
Rated speed rpm : 1190
Tolerance 1/min : ± 15

rack travel mm : 0.50

Tolerance mm : ± 0.50
Rated speed rpm : 1250

LOW IDLE

control lever
position degree : 82.0
tolerance degree : ± 4.0

control lever
position degree : 18.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 220
CRT mm min. : > 7.40

Testing:

Rated speed rpm : 320
rack travel mm : 4.60
Tolerance mm : ± 0.10

Rated speed rpm : 380

TORQUE CONTROL

Rated speed rpm : 500
rack travel mm : 12.90
Tolerance mm : ± 0.05

Rated speed rpm : 1050
rack travel mm : 11.80
Tolerance mm : ± 0.10

Rated speed rpm : 720
rack travel mm : 12.10
Tolerance mm : ± 0.15

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 12.90
Tolerance mm : ± 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 9.50

N10

Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 500

Pressure hPa : 970
rack travel mm : 2.90
Tolerance mm : ± 0.20

Pressure hPa : 230
rack travel mm : 0.25
Tolerance mm : ± 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 1050
Del. quantity
cm³/1000 strokes : 224.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 212.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

LOW IDLE

Rated speed rpm : 320

Rack travel in mm : 4.60
Tolerance mm : ± 0.10
Del. quantity

cm³/1000 strokes : 50.0
Tolerance
cm³/1000 strokes : ± 2.5
Check tolerance
cm³/1000S. : ± 5.0

Speed
Tolerance
cm³/1000 strokes : 5.0

Check tolerance
cm3/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 24.04.97
Test oil : ISO 4113

Combination No. : 0 402 848 300

Injection pump
Pump designation : PE8P120A520LS8518
EP type number : 0 412 828 201

Governor
Governor design. : RQV300...115GPA1323K
Governor no. : 0 421 815 963

Cust. part No. : 51.11103-7492

Customer-spec. information
Customer : MAN
Motor : D 2848 LE 403
Power kW : 583.0

TEST BENCH REQUIREMENTS

Inlet line : 3.2

Test oil inlet
temp. °C : 40
Tolerance °C : + 2.0

Overflow valve : 1 417 413 078

Inlet press. bar : 2.5
Tolerance bar : + 0.1

Overflow quantity
min. l/h : 170
Tolerance l/h : + 15.0

Test nozzle holde
assembly : 1 688 901 105

Opening pressure
bar : 208.5
Tolerance bar : + 1.5

Test lines : 1 680 750 089

Outside diameter : 8.0

x inside diameter : 3.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : + 1.0

Prestroke mm : 5.65
Tolerance mm : + 0.05
Check
tolerance mm : + 0.10

Rack travel in mm : 13.00
Tolerance mm : + 0.50

Firing order : 8-7A- 2- 6A- 3
 : - 5A- 4

Phasing : 0-45-90-135-180
 : -225-270-315
Tolerance : + 0.50
Check
tolerance °NW : + 0.75

Start of delivery blocking
Tolerance : + 0.10
Check
tolerance °NW : + 0.75

Barrel no. : 8

BASIC SETTING

Rated speed rpm : 1150

Rack travel in mm : 14.00
Tolerance mm : + 0.05

<hr/>	
Del. quantity	
cm ³ /1000 strokes	: 335.0
<hr/>	
Tolerance	
cm ³ /1000 strokes	: ± 1.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: ± 4.0
<hr/>	
Spread	
<hr/>	
Tolerance	
cm ³ /1000 strokes	: 8.0
<hr/>	
Check tolerance	
cm ³ /1000S.	: 12.0
<hr/>	

Rated speed rpm	: 300
Rack travel in mm	: 5.20
Tolerance mm	: ± 0.10
Del. quantity	
cm ³ /1000 strokes	: 49.0
Tolerance	
cm ³ /1000 strokes	: ± 3.0
Check tolerance	
cm ³ /1000S.	: ± 8.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

(B) SETTING OF INJECTION PUMP WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	: 1206
guide sleeve	
travel mm	: 9.84
Tolerance mm	: ± 0.15
<hr/>	
Rated speed rpm	: 300
guide sleeve	
travel mm	: 1.61
Tolerance mm	: ± 0.20
<hr/>	
Rated speed rpm	: 797
guide sleeve	
travel mm	: 6.36
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 460

guide sleeve	
travel mm	: 3.78
Tolerance mm	: ± 0.25
<hr/>	
Rated speed rpm	: 1500
guide sleeve	
travel mm	: 13.50
Tolerance mm	: ± 0.50

GUIDE SLEEVE POSITION

Rated speed rpm	: 1323
Rack travel in mm	: 13.00
Tolerance mm	: ± 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	: 1150
Aneroid pressure	
hPa	: 2000
Del. quantity	
cm ³ /1000 strokes	: 335.0
Tolerance	
cm ³ /1000 strokes	: ± 1.0
Check tolerance	
cm ³ /1000S.	: ± 4.0
Spread	
Tolerance	
cm ³ /1000 strokes	: 8.0
Check tolerance	
cm ³ /1000S.	: 12.0

CONTROL LEVER

control lever	
position degree	: 118.0
tolerance degree	: ± 4.0

RATED SPEED

rack travel mm	: 13.00
Rated speed rpm	: 1195
Tolerance 1/min	: ± 5
<hr/>	
rack travel mm	: 4.00
Rated speed rpm	: 1320
Tolerance 1/min	: ± 15
<hr/>	
rack travel mm	: 0.50
Tolerance mm	: ± 0.50
Rated speed rpm	: 1475

LOW IDLE

control lever
position degree : 72.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 200
CRT mm min. : > 7.39

Testing:

Rated speed rpm : 300
rack travel mm : 5.20
Tolerance mm : ± 0.10

Rated speed rpm : 332

TORQUE CONTROL

Rated speed rpm : 1150
rack travel mm : 14.00
Tolerance mm : ± 0.05

Rated speed rpm : 1000
rack travel mm : 13.10
Tolerance mm : ± 0.10

Rated speed rpm : 850
rack travel mm : 12.00
Tolerance mm : ± 0.10

Rated speed rpm : 650
rack travel mm : 11.20
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 6.30
Tolerance mm : ± 0.10

Rated speed rpm : 500
rack travel mm : 7.40
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1150
Pressure hPa : 2000
rack travel mm : 14.00
Tolerance mm : ± 0.05

Rated speed rpm : 1150
Pressure hPa : -

rack travel mm : 7.80
Tolerance mm : ± 0.15

MEASUREMENT

Rated speed rpm : 1150

Pressure hPa : 330
rack travel mm : 8.10
Tolerance mm : ± 0.05

Pressure hPa : 1100
rack travel mm : 12.20
Tolerance mm : ± 0.15

Start interlock

Rated speed rpm : > 170
Rated speed rpm : < 230

Check
speed 1/min : > 150
Check
speed 1/min : < 240

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 2000
Rated speed rpm : 1000
Del. quantity
cm³/1000 strokes : 315.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000s. : ± 8.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 850
Del. quantity
cm³/1000 strokes : 290.0
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000s. : ± 8.0

Aneroid pressure
hPa : 2000
Rated speed rpm : 650
Del. quantity
cm³/1000 strokes : 279.0
Tolerance
cm³/1000 strokes : ± 4.0

Check tolerance
cm³/1000S. : + 8.0

Delivery for shutoff assemblies
(refer to cam sequence).
Arbitrary delivery for standard plunger
barrel assemblies.

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 0.1
Tolerance
cm³/1000 strokes : + 0.1
Check tolerance
cm³/1000S. : + 0.1

Delivery for shutoff assemblies
(refer to cam sequence).
Arbitrary delivery for standard plunger
barrel assemblies.

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 165.0
Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 15.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 175.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 4.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

STARTING FUEL DELIVERY

Rated speed rpm : 100
rack travel mm : 20.50
Tolerance mm : + 0.50
Del. quantity
cm³/1000 strokes : 130.0

N15

Tolerance
cm³/1000 strokes : + 15.0
Check tolerance
cm³/1000S. : + 19.0

LOW IDLE

Delivery for standard plunger/barrel
assemblies.
Zero delivery for shutoff assemblies
(refer to cam sequence).

Rated speed rpm : 300

Rack travel in mm : 5.20
Tolerance mm : + 0.10
Del. quantity
cm³/1000 strokes : 49.0
Tolerance
cm³/1000 strokes : + 3.0
Check tolerance
cm³/1000S. : + 8.0
Speed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 30.07.96
Test oil : ISO 4113

Combination No. : 0 402 896 015

Injection pump
Pump designation : PE6P120A32ORS8033
EP type number : 0 412 826 031

Governor
Governor design. : RE30
Governor no. : 0 421 890 027

Cust. part No. : 425758 P04 v. 09/95

Customer-spec. information
Customer : VOLVO-TRUCK
Motor : DH 10 A
Power KW : 265.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 073

Inlet press. bar : 3.0
Tolerance bar : ± 0.1

Test nozzle holder assembly : 1 688 901 103

Opening pressure bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0

N16

x inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values in Section (B) must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 4.40
Tolerance mm : ± 0.05
Check tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check tolerance °NW : ± 0.75

Start of delivery mark

Barrel no. : 1

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR POSITION

Engine speed min⁻¹: 0

Setting point
(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check
tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.
CRT mm : 0.75
Tolerance mm : +/- 0.25
Check
tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4

N17

Tolerance V : +/- 0.6
Check
tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 600
Uact V : 2.800
Del. quantity
cm³/1000 strokes : 295.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 950
Uact V : 2.800
Del. quantity
cm³/1000 strokes : 252.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 950
Uact V : 2.200
Del. quantity
cm³/1000 strokes : 178.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0

TEST POINT L1

Rated speed rpm : 250
Uact V : 1.470
Tolerance Volt : +/- 0.060

Check tolerance
Volt : ± 0.060
Del. quantity
cm³/1000 strokes : 21.0
Tolerance
cm³/1000 strokes : ± 3.0
Speed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet



BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 15.08.95
Test oil : ISO 4113

Combination No. : 0 402 896 017

Injection pump
Pump designation : PE6P120A320RS8035
EP type number : 0 412 826 033

Governor
Governor design. : RE30
Governor no. : 0 421 890 030

Cust. part No. : 3825439-SK0EV.
: -AUDIT

Customer-spec. information
Customer : PENTA
Motor : TAMD 72 P-A
Power KW : 316.0

TEST BENCH REQUIREMENTS

Inlet line : 3.1

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 078

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Test nozzle holder
assembly : 1 688 901 103

Opening pressure
bar : 208.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008

Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

Pump-specific values
in Section (B)
must be observed!

(A) INJECTION PUMP SETTINGS
No basic setting.
Setting of constant delivery
under Section C.

BEGINNING OF DELIVERY

Test pressure bar : 25.0
Tolerance bar : ± 1.0

Prestroke mm : 4.05
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 0.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300

Start of delivery mark

Barrel no. : 1

(B) POSITIONER TESTING
Warm-up time: 3 minutes at
n=600 min⁻¹, Uact = 2.5 V

TESTING & SETTING RACK TRAVEL SENSOR
POSITION

Engine speed min⁻¹: 0

Setting point

(P, R and H pump)

Uact V : 3.100
CRT mm : 13.00
Tolerance mm : +/- 0.05
Check tolerance mm : +/- 0.10

Check value
(P, R and H pump)

Uact V : 1.700
CRT mm : 6.15
Tolerance mm : +/- 0.25
Check tolerance mm : +/- 0.30

Setting point
(M pump)

Uact V : 3.100
CRT mm : 12.50
Tolerance mm : +/- 0.05
Check tolerance mm : +/- 0.10

Check value
(M pump)

Uact V : 1.700
CRT mm : 5.50
Tolerance mm : +/- 0.25
Check tolerance mm : +/- 0.30

Stop position

Uact V : Value with
deenergised adjusting magnet
and control rod in
stop position.

CRT mm : 0.75
Tolerance mm : +/- 0.25
Check tolerance mm : +/- 0.35

ENGINE-SPEED SENSOR
(All P and R pumps not
H and M pumps)

Test with control rod
in stop position

Engine speed min-1: 60
Amplitude V : 1.4
Tolerance V : +/- 0.6
Check

tolerance V : +/- 1.20

Engine speed min-1: 600
Difference
Amplitude to
Amplitude V : max.1.4

(C) INJECTION PUMP WITH POSITIONER

TEST POINT V1

Rated speed rpm : 600
Uact V : 2.800
Del. quantity
cm³/1000 strokes : 305.0
Tolerance
cm³/1000 strokes : +/- 1.0
Check tolerance
cm³/1000S. : +/- 4.0
Spreed
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 11.0
FUEL DELIVERY CHARACTERISTICS

Rated speed rpm : 1300
Uact V : 2.600
Del. quantity
cm³/1000 strokes : 215.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 1000
Uact V : 2.400
Del. quantity
cm³/1000 strokes : 208.0
Tolerance
cm³/1000 strokes : +/- 3.0
Check tolerance
cm³/1000S. : +/- 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

Rated speed rpm : 800

Uact V : 2.200
Del. quantity
cm³/1000 strokes : 191.0
Tolerance
cm³/1000 strokes : +- 3.0
Check tolerance
cm³/1000S. : +- 6.0
Spreed
Tolerance
cm³/1000 strokes : 10.0
Check tolerance
cm³/1000S. : 14.0

TEST POINT L1

Rated speed rpm : 275
Uact V : 1.600
Tolerance Volt : +- 0.060
Check tolerance
Volt : +- 0.060
Del. quantity
cm³/1000 strokes : 88.0
Tolerance
cm³/1000 strokes : +- 3.0
Spreed
Tolerance
cm³/1000 strokes : 5.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.97
Test oil : ISO 4113
Combination No. : 0 402 946 024A

Injection pump
Pump designation : PES6P120A720RS8045
EP type number : 0 412 926 028

Governor
Governor design. : RQ750PA1299
Governor no. : 0 421 801 810

Cust. part No. : 1E88641 - Version A

Customer-spec. information
Customer : SCANIA
Motor : DSC1158A

TEST BENCH REQUIREMENTS

Inlet Line : EHAB

Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0

Overflow valve : 2 417 413 082

Inlet press. bar : 2.5
Tolerance bar : ± 0.1

Overflow quantity
min. l/h : 90
Tolerance l/h : ± 20.0

Test nozzle holde
assembly : 1 688 901 104

Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test Lines : 1 680 750 008

Outside diameter : 6.0

x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0

Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10

Rack travel in mm : 10.50
Tolerance mm : ± 1.50

Firing order : 1- 5- 3- 6- 2-
: 4

Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance *NW : ± 0.75

Start of delivery blocking
Tolerance : ± 0.10
Check
tolerance *NW : ± 0.75

Barrel no. : 1

BASIC SETTING

Rated speed rpm	:	850
<hr/>		
Rack travel in mm	:	13.70
Tolerance mm	:	+ 0.05
<hr/>		
Del. quantity		
cm ³ /1000 strokes	:	338.0
<hr/>		
Tolerance		
cm ³ /1000 strokes	:	+ 1.0
<hr/>		
Check tolerance		
cm ³ /1000S.	:	+ 10.0
<hr/>		
Spread		
<hr/>		
Tolerance		
cm ³ /1000 strokes	:	8.0
<hr/>		
Check tolerance		
cm ³ /1000S.	:	12.0
<hr/>		
Rack travel in mm	:	3.30
Tolerance mm	:	+ 0.20
Del. quantity		
cm ³ /1000 strokes	:	30.0
Tolerance		
cm ³ /1000 strokes	:	+ 4.0
Check tolerance		
cm ³ /1000S.	:	+ 6.0
Spread		
Tolerance		
cm ³ /1000 strokes	:	5.0
Check tolerance		
cm ³ /1000S.	:	9.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm	:	907
guide sleeve		
travel mm	:	5.23
Tolerance mm	:	+ 0.15
<hr/>		
Rated speed rpm	:	590
guide sleeve		
travel mm	:	-9.42
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	1010
guide sleeve		
travel mm	:	18.06

Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	953
guide sleeve		
travel mm	:	10.00
Tolerance mm	:	+ 0.25
<hr/>		
Rated speed rpm	:	1010
guide sleeve		
travel mm	:	11.50
Tolerance mm	:	+ 0.50

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm	:	850
Aneroid pressure		
hPa	:	1500
Del. quantity		
cm ³ /1000 strokes	:	338.0
Tolerance		
cm ³ /1000 strokes	:	+ 1.0
Check tolerance		
cm ³ /1000S.	:	+ 10.0
Spread		
Tolerance		
cm ³ /1000 strokes	:	8.0
Check tolerance		
cm ³ /1000S.	:	12.0

CONTROL LEVER

control lever		
position degree	:	29.0
tolerance degree	:	+ 4.0
<hr/>		
control lever		
position degree	:	90.0
tolerance degree	:	+ 4.0

ASSEMBLY GOVERNOR SETTING

Rated speed rpm	:	900
rack travel mm	:	12.70
<hr/>		
Rated speed rpm	:	936
Tolerance 1/min	:	+ 4
rack travel mm	:	4.00
<hr/>		
rack travel mm	:	0.50
Tolerance mm	:	+ 0.50
Rated speed rpm	:	1000
<hr/>		
Rated speed rpm	:	901
rack travel mm	:	12.70

Rated speed rpm : 937
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1000

Rated speed rpm : 902
rack travel mm : 12.70

Rated speed rpm : 938
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1000

Rated speed rpm : 903
rack travel mm : 12.70

Rated speed rpm : 939
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1000

Rated speed rpm : 904
rack travel mm : 12.70

Rated speed rpm : 940
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1000

Rated speed rpm : 905
rack travel mm : 12.70

Rated speed rpm : 941
Tolerance 1/min : + 4
rack travel mm : 4.00

rack travel mm : 0.50
Tolerance mm : + 0.50
Rated speed rpm : 1000

TORQUE CONTROL
Rated speed rpm : 850

rack travel mm : 13.70
Tolerance mm : + 0.05

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 500
Pressure hPa : 1500
rack travel mm : 13.75
Tolerance mm : + 0.05

Rated speed rpm : 500
Pressure hPa : -
rack travel mm : 8.50
Tolerance mm : + 0.20

MEASUREMENT

Rated speed rpm : 500
Pressure hPa : 320
rack travel mm : 9.80
Tolerance mm : + 0.25

Pressure hPa : 820
rack travel mm : 12.40
Tolerance mm : + 0.05

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 218.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 6.0

End of test specification sheet

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Refer to Service Info for test and adjustment instructions.
See microcard(s) W400/...

Edition : 10.07.97
Test oil : ISO 4113
Combination No. : 0 402 946 026A
Injection pump
Pump designation : PES6P120A720RS8045
EP type number : 0 412 926 028
Governor
Governor design. : RQV350...1100PA1305K
Governor no. : 0 421 815 967

Cust. part No. : 1388631 - Version A

Customer-spec. information
Customer : SCANIA
Motor : DSI1174M

TEST BENCH REQUIREMENTS

Inlet line : EHAB
Test oil inlet
temp. °C : 40
Tolerance °C : ± 2.0
Overflow valve : 2 417 413 082
Inlet press. bar : 3.0
Tolerance bar : ± 0.1
Overflow quantity
min. l/h : 80
Tolerance l/h : ± 10.0
Test nozzle holde
assembly : 1 688 901 104
Opening pressure
bar : 251.5
Tolerance bar : ± 1.5

Test lines : 1 680 750 008
Outside diameter : 6.0
x inside diameter : 2.0
x length mm : 600

REMARKS

(A) INJECTION PUMP SETTING VALUES
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure bar : 26.0
Tolerance bar : ± 1.0
Prestroke mm : 3.65
Tolerance mm : ± 0.05
Check
tolerance mm : ± 0.10
Rack travel in mm : 10.50
Tolerance mm : ± 1.50
Firing order : 1- 5- 3- 6- 2-
: 4
Phasing : 0-60-120-180-240
: -300
Tolerance : ± 0.30
Check
tolerance °NW : ± 0.75
Start of delivery blocking
Tolerance : ± 0.10
Check
tolerance °NW : ± 0.75
Barrel no. : 1

BASIC SETTING

Rated speed rpm : 1100

Rack travel in mm : 11.75
Tolerance mm : + 0.05

Del. quantity
cm³/1000 strokes : 302.0

Tolerance
cm³/1000 strokes : + 1.0

Check tolerance
cm³/1000S. : + 9.0

Spread

Tolerance
cm³/1000 strokes : 8.0

Check tolerance
cm³/1000S. : 12.0

Rated speed rpm : 350

Rack travel in mm : 4.10
Tolerance mm : + 0.30

Del. quantity
cm³/1000 strokes : 30.0

Tolerance
cm³/1000 strokes : + 3.0

Check tolerance
cm³/1000S. : + 6.0

Spread

Tolerance
cm³/1000 strokes : 4.0

Check tolerance
cm³/1000S. : 8.0

(B) SETTING OF INJECTION PUMP
WITH GOVERNOR

GUIDE SLEEVE TRAVEL

Rated speed rpm : 1166
guide sleeve
travel mm : 10.16
Tolerance mm : + 0.15

Rated speed rpm : 350
guide sleeve
travel mm : 2.00
Tolerance mm : + 0.20

Rated speed rpm : 755
guide sleeve
travel mm : 6.14
Tolerance mm : + 0.25

Rated speed rpm : 460
guide sleeve
travel mm : 4.07
Tolerance mm : + 0.25

Rated speed rpm : 1400
guide sleeve
travel mm : 13.50
Tolerance mm : + 0.50

GUIDE SLEEVE POSITION

control lever
position degree : - 1
Rated speed rpm : 1237

Rack travel in mm : 12.75
Tolerance mm : + 1.30

FULL LOAD DELIVERY AT FULL LOAD STOP

Rated speed rpm : 1100
Aneroid pressure
hPa : 1500
Del. quantity
cm³/1000 strokes : 302.0
Tolerance
cm³/1000 strokes : + 1.0
Check tolerance
cm³/1000S. : + 9.0
Spread
Tolerance
cm³/1000 strokes : 8.0
Check tolerance
cm³/1000S. : 12.0

CONTROL LEVER

control lever
position degree : 65.0
tolerance degree : + 4.0

control lever
position degree : 119.0
tolerance degree : + 4.0

RATED SPEED

rack travel mm : 10.70
Rated speed rpm : 1145
Tolerance 1/min : + 5

Check
speed 1/min : + 10

rack travel mm : 4.00

Rated speed rpm : 1247
Tolerance 1/min : ± 15
Check
speed 1/min : ± 20

rack travel mm : 0.50
Tolerance mm : ± 0.50
Rated speed rpm : 1350

LOW IDLE

control lever
position degree : 73.0
tolerance degree : ± 4.0

control lever
position degree : 20.0
tolerance degree : ± 4.0

Setting point w/out bumper spring

Rated speed rpm : 250

CRT mm min. : > 6.50

Testing:

Rated speed rpm : 350
rack travel mm : 4.10
Tolerance mm : ± 0.30

TORQUE CONTROL

Rated speed rpm : 1100
rack travel mm : 11.75
Tolerance mm : ± 0.05

Rated speed rpm : 700
rack travel mm : 10.90
Tolerance mm : ± 0.10

ANEROID/ALTITUDE
COMPENSATOR TEST

SETTING

Rated speed rpm : 1100
Pressure hPa : 1500
rack travel mm : 13.75
Tolerance mm : ± 0.05

Rated speed rpm : 1100
Pressure hPa : -
rack travel mm : 7.10

N27

Tolerance mm : ± 0.20

MEASUREMENT

Rated speed rpm : 1100

Pressure hPa : 340
rack travel mm : 8.35
Tolerance mm : ± 0.25

Pressure hPa : 800
rack travel mm : 10.65
Tolerance mm : ± 0.25

FUEL DELIVERY CHARACTERISTICS

Aneroid pressure
hPa : 1500
Rated speed rpm : 700
Tolerance
cm³/1000 strokes : ± 4.0
Check tolerance
cm³/1000S. : ± 6.0

Aneroid pressure
hPa : -
Rated speed rpm : 500
Del. quantity
cm³/1000 strokes : 163.0
Tolerance
cm³/1000 strokes : ± 1.0
Check tolerance
cm³/1000S. : ± 4.0

LOW IDLE

Rated speed rpm : 350

Rack travel in mm : 4.10
Tolerance mm : ± 0.30

Del. quantity
cm³/1000 strokes : 30.0
Tolerance
cm³/1000 strokes : ± 3.0
Check tolerance
cm³/1000S. : ± 6.0

Speed
Tolerance
cm³/1000 strokes : 4.0
Check tolerance
cm³/1000S. : 8.0

End of test specification sheet

